VOLUME XII
No. 9

GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

JANUARY, 1938

IMPERIAL MYCOLOGICAL
24 JAN 1938
INSTITUTE

PRINTED UNDER THE AUTHORITY OF HIS MAJESTY'S STATIONERY OFFICE
BY BELL & LOGAN, LTD., BELFAST

GOVERNMENT OF NORTHERN IRELAND

MINISTRY OF AGRICULTURE

MONTHLY REPORT

January, 1938

VOLUME XII No. 9

CONTENTS

PAGE

AGRICULTURAL CONDITIONS:—

THE CROPS, SUPPLIES AND PRICES 459
LIVE STOCK 462
THE COST OF LIVING INDEX FIGURE 463
THE MARKETS DURING DECEMBER 463
EXTENT AND PRODUCE OF GRAIN CROPS IN NORTHERN IRELAND, 1937 ... 465

MARKETING SCHEMES:—

Agricultural Marketing (Pig Industry) Act, (N.I.), 1934:—

PIG PRICES FOR JANUARY, 1938 466
GRADING STATISTICS 468
COST OF STANDARD PIG RATION 469

The Cattle Industry (Emergency Provisions) Acts, 1934 and 1935, and The Livestock Industry Act, 1937:—

SUMMARY OF PAYMENTS 470

AGRICULTURAL NOTES:—

SEASONAL FARM NOTES 471
SEASONAL LIVESTOCK NOTES 473
SEASONAL GARDEN AND ORCHARD NOTES 475
SEASONAL POULTRY-KEEPING NOTES 477
WINTER RATIONS FOR STOCK-FEEDING 480
RESULTS OF OAT VARIETY TRIALS, 1937 481
RESTORATION OF OLD HEDGES 484
RESULTS OF TEST COMPARING KING EDWARD AND GLADSTONE POTATO VARIETIES 485

PAGE

ANNOUNCEMENTS AND REMINDERS:

GENERAL 487
REGISTER OF ACCREDITED POULTRY FARMERS 488
LECTURES 488
CLASSES 489
SCHOOLS NEWS 489
NAMES AND ADDRESSES OF INSTRUCTORS EMPLOYED BY COUNTY AGRICULTURAL COMMITTEES 491
MILK BOTTLES 492
THE MARKETING OF FRUIT:—
LOANS FOR THE PURCHASE OF SPRAYING MATERIALS AND SPRAYING MACHINES 493
SIXTEENTH EGG-LAYING TEST AT STORMONT 494

AGRICULTURAL PRICES:—

FEEDING STUFFS AT SPECIFIED CENTRES 497
FEEDING STUFFS (WITH CALCULATED VALUES OF PROTEIN AND STARCH EQUIVALENTS) 498
FERTILISERS 503
FAT STOCK AT BELFAST AUCTION MARTS 504
LIVE STOCK AT FAIRS 505

AGRICULTURAL TRADE RETURNS:—

SHIPMENTS OF LIVE STOCK FROM NORTHERN IRELAND PORTS 506
IMPORTS AND EXPORTS OF AGRICULTURAL PRODUCTS 507
NUMBERS OF CATTLE AND ACCOUNT OF TRADE AT FAIRS 508

MINISTRY OF AGRICULTURE

MONTHLY REPORT

JANUARY, 1938.

At the beginning of a new year it is customary to make resolutions for the future. In these modern days people are inclined to discount the practice on account of the fact that it has always been surrounded with a great amount of sentiment. Leaving all sentiment aside, however, there is much to be said for stock-taking and planning for the future. All go-ahead business firms find that it is not alone advantageous but necessary, and in the business of agriculture it could be carried out to a much greater extent with beneficial results to the industry. There is much evidence that the farming community is not as alive to the advantages to be gained by planning ahead as it might be. The excuse may be advanced that in no other industry does the weather play such an important part, but this is not entirely true, as the trade in many industries suffers to a marked extent from unseasonal weather.

Now is the time when tillage farmers should be making plans for cropping, and they should decide what fields will be sown under certain crops, and the kinds of seeds and the quantities of manures that will be needed. Provision should also be made for obtaining supplies of seeds and manures. It is the first-comers who obtain the pick of the market, and this applies with particular force to the farmer in search of supplies of seeds.

In the poultry department breeders should be thinking out and planning for the laying down of a sound foundation to ensure good supplies of eggs in September and October next, by selecting hatching eggs from good quality stock and hatching them now.

In the realm of horticulture the work of planning affords a good example for farmers and others. At the commencement of the year the gardener usually makes out lists of seeds for sending to the seedsman, and also of other incidentals connected with future requirements. It is hoped, therefore, that before the month is out the farmers who have neglected, heretofore, to make provision on these lines will give the matter serious consideration this year. Well regulated thought and work are essential nowadays if success is to be attained.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st JANUARY, 1938.

December, unlike the two previous months, was true to tradition, and very severe wintry weather ruled for the greater part of the month. The mild weather of November continued only for the first few days of last month, and during the first week-end climatic conditions underwent a complete change for the worse. Winter set in in earnest, and for the next two weeks there were falls of snow and several heavy frosts, together with occasional showers of rain, hail and sleet. About the 20th of the month there was a general thaw, and damp but open conditions continued from then to the end of the year.

The frost-bound conditions were most trying on outlying stock, and caused a heavy drain on supplies of food-stuffs. Outdoor work on the farm, which had progressed so well this season, was brought to a standstill, and the ploughing of lea land was only resumed during the last week of the month; in many districts much of this work yet remains to be done. The snow and frosts also interfered with transport, as many roads were made impassable, and on others extreme caution was necessary.

Well-managed pastures are still looking fresh despite the snow and frost, and providing a fair amount of "keep" for live-stock, but as a general rule pastures failed rapidly during the month, and the hand-feeding of outliers, particularly with fodder, had to be undertaken to an increasing extent. Home-grown foods such as hay, straw, corn, and roots are in good supply for winter feeding, and the quality, generally, is satisfactory. Potatoes also are plentiful, and on account of their cheapness farmers are using them to an increased extent for feeding to stock. Another reason for this step was, of course, the dearness of imported food-stuffs which, it was noted, continued to firm in price with the advance of the winter season.

Although last month's weather was particularly hard on live stock, all classes have come through the month moderately well. Most of the animals were housed during the storm, and hand-fed with fodder and roots and, in some cases, with meals in addition. Cattle made a fair thrive, and beyond a few cases of "red water" and abortion, the health of the herds is normal. Sheep have not done so well, but precautionary measures have kept liver-fluke disease in check, and only a relatively few cases have occurred. In mountainous districts the farmers' troubles and expenses were increased, through bringing the sheep down from the hills for shelter and feeding them during the snow-storm. In regard to the number of stall-fed cattle, it is understood that the increasing costs of purchased feeding-stuffs have influenced

some feeders to reduce their outlay, and it is generally held that the trend in this direction is likely to become more marked as the season advances and the number of forward stores decreases.

With weather and ground conditions unsuitable, the application of lime and phosphatic manures to pastures was greatly curtailed during December. It may be stated, however, that there has been a very good response to the Land Fertility Scheme as regards the use of lime, but on account of the shortage of supplies of British-produced basic slag the purchase of phosphatic manures has been restricted, although the Ministry's advice as to the use, as an alternative, of gafsa rock phosphate is being followed in many cases.

THE CROPS.

WHEAT.—There was very little sowing of wheat done during December, but already there had been a much larger area sown than was possible in the winter of 1936. Returns of the extent and production of this crop are given on page 465. The bulk of last season's crop has been threshed and sold at prices averaging a little under 10/- per cwt. In a few districts, however, threshing continued at intervals during last month, and the yields and the quality of the grain have been generally satisfacotry.

OATS.—The threshing of this crop proceeded during the month as the weather permitted, but there yet remains about half the crop to be threshed in most districts. Recent returns of yields varied from 15 to 20 cwt. per statute acre. The average figure, as estimated for statistical purposes, given on page 465, shows that the yield last season was smaller than in 1936. In some fields where the oat crop followed potatoes, very poor yields of only fair quality grain were obtained last season. As a general rule, however, the quality of the grain is better than in 1936.

The total quantity of white oats marketed during December showed a decrease on the figure for the previous month. Prices improved during the month, and the trend at the close was upward; the average figure for December was 6/11¾d. per cwt. as against 6/10¼d. per cwt. for November, 1937, and 5/8½d. per cwt. for December, 1936. The range of prices of this commodity at markets last month was from 6/6d. to 8/8d. per cwt.

BARLEY.—The threshing of this crop proceeded during the month, and in some districts it has been completed. The effects of the unfavourable weather during last spring on the barley crop are reflected in the return on page 465, which shows the decrease in the acreage of this and the other corn crops on the year, together with the less satisfactory yields per acre last season. Variable accounts continue to be received as to the results of threshings. In

some instances, where the crop was sown under adverse circumstances, it was almost a complete failure. Except in districts where barley is grown for sale for brewing and distilling, most of the grain is retained on the farm for feeding to pigs, and the quality is generally regarded as from fair to good.

FLAX.—Good progress was maintained with the scutching of flax last month, and the greater portion of this work has now been done. Some very good yields of fibre have been reported, but on the whole it is unlikely that the average yield will exceed normal dimensions. The quality is variable; in some districts it is very good, but most of the returns indicate that it is generally a little above moderate.

A larger quantity of flax was marketed last month than in November, and the average price improved on the month by 2d. to 9/10½d. per stone. This compares with the figure of 9/4½d. per stone for December, 1936. The range of prices last month was from 7/- to 11/9d. per stone.

POTATOES.—This crop was lifted and stored in a dry condition last season, and this has greatly helped in preserving the quality of the tubers. Recent accounts show that stocks in pits and in stores have not deteriorated in quality except in a few cases where pits situated in heavy soil areas have been affected by the frosts and by dampness. As indicated, potatoes are of much better quality than a year ago, but as the shipping trade continues almost lifeless, only a relatively small proportion of the entire crop has as yet been marketed. The feeding of potatoes to farm stock is being practised on a larger scale than usual.

Increased supplies of potatoes were marketed for local consumption during December, and the average price for all classes was stationary at 2/6½d. per cwt. Kerr's Pink also showed no change in price at 2/11d. per cwt., but Arran Victory was 2¾d. cheaper than for the month of November at an average figure of 2/3¾d. per cwt.

The shipping trade showed a slight improvement during the past month. Increased quantities were shipped, and growers' prices were slightly firmer on the month. The following were the quantities inspected for shipment to Great Britain:—

Week ended	*Tons*	*Week ended*	*Tons*
5th December, 1936	5,911	4th December, 1937	4,120
12th ,,	4,526	11th ,,	4,634
19th ,,	4,092	18th ,,	3,844
26th ,,	3,091	25th ,,	4,252
2nd January, 1937	3,939	1st January, 1938	3,427

The following were the prices per ton paid to growers by shipping merchants during the week ended 8th January:—

WARE.

	Bagged	*Loose*
Up-to-Date (Red soil)	£2-5-0 to £2-10-0	£2-0-0
Arran Banner	£2-0-0 to £2-5-0	£1-15-0
Arran Consul	£2-0-0 to £2-5-0	£1-15-0 to £2-0-0
Arran Victory	£2-0-0 to £2-5-0	£1-15-0 to £2-0-0
Kerr's Pink	£2-0-0 to £2-10-0	£1-15-0 to £2-5-0

The seed trade remained active during last month and prices for the week ended 8th January were:—

SEED.

	Bagged	*Loose*
Up-to-Date	£4-0-0 to £4-10-0	£4-0-0
Majestic	£4-0-0	——
King Edward	£4-10-0	——

MANGELS.—The roots are of good quality and are keeping well in storage. Only in a few instances have the frosts caused some damage.

TURNIPS.—On most farms the roots are of good quality, and reasonably good average yields are expected. Although no reports of injury by the frosts have as yet been received it is feared that in low-lying and heavy soil areas the frosts may have caused some damage.

HAY.—There was a heavy run on supplies of hay during the rough weather of last month, but after a good harvest supplies on farms are still ample for future requirements. Most of the upland hay is of good quality, but a fair proportion of the meadow hay is less satisfactory.

Larger quantities of hay were marketed during December, compared with the previous month, and average prices improved by 3/7d. to 65/1d. per ton for upland hay, and by 1/9d. to 46/9d. per ton for meadow hay.

The smaller qualities of grass-seed marketed last month were dearer than in November. The average price of Italian rose by 5¾d. to 8/1¼d. per cwt., Perennial by 5d. to 9/3½d. per cwt., and mixed seed by 6d. to 6/11¾d. per cwt. Small lots of Crested Dogstail at Cookstown were sold at from 51/- to 56/6d. per cwt.

CABBAGE AND KALE.—The quality of these crops remains generally good, but the frosts have done some damage to the relatively small stocks now remaining. Cabbage and kale were used to a large extent for feeding to cattle last month, and in a number of cases farmers have exhausted their supplies.

LIVE STOCK.

CATTLE.—Stores were in very fair condition and healthy. The very cold weather was most trying on the animals, and in the more exposed districts owners had to house their stock as well as hand-feed them. The great majority of outlying cattle in all districts were hand-fed last month.

Offerings at fairs during December were small on account of the state of the roads during the frosty weather, and later the holidays interfered with trade. The demand for store cattle remained good throughout, and all cattle shown in condition, especially forward stock, one-year-olds and fancy heifers, sold readily at prices tending upward.

Dairy cattle also were maintained in fairly good condition, and the general state of health is normal. Calving was fairly satisfactory in most districts, but there were an appreciable number of complaints of cows returning to service. The milk yield was depressed below the normal by weather conditions, notwithstanding the general efforts of farmers to maintain seasonal output by feeding more liberally. Supplies of dairy cattle at fairs last month were very small and, as a general rule, the quality was not quite so good as formerly. A keen trade continued, more especially for good young cows, and recent prices were firmly held.

SHEEP.—Last month was a very trying one for the flocks, but most of the animals were maintained in very fair condition. The general health is good, and there have been only a few isolated cases of liver fluke disease and foot rot. It is owing to the fact that farmers are beginning to realise to a greater extent the wisdom of the saying " prevention is better than cure," that these complaints are now being confined to very small dimensions, and serious outbreaks avoided. Supplies of sheep and lambs offered for sale last month were very small and trade was irregular. The best enquiry was for fat lambs, and prices for these were generally firm on the month.

PIGS.—As in the case of cattle, supplies of pigs at fairs were shorter than a month ago in consequence of both weather and holiday conditions. Moderately good supplies, however, met a steady demand, and good clearances were effected at former rates. Very few sows were on offer, and for these the demand was generally fair, prices ruling from £6 10s. 0d. to £9 10s. 0d., and in the case of good quality stock up to £12 per head. At most centres supplies of pork were in excess of requirements, but a fairly good trade was done during last month.

HORSES.—The demand for agricultural horses continued fairly steady, and prices remained high at from £35 to £50 per head for the best types, while others were selling at from £20 to £35 each.

Milk.—Supplies were considerably reduced in many districts as the result of the snow and frosty conditions, and the yield may be stated to have declined slightly below the normal. Creameries paid from 4½d. to 6d. per gallon for milk delivered, the separated milk being returned to the farmer.

It should be noted that for the period, 1st to 9th November, 1937, no equalization payments for milk produced in Northern Ireland, and delivered to creameries for manufacturing purposes were made, but that for the period 10th to 30th November, when the average price was raised by ½d. to 6½d. per gallon, the rate of equalization payments was determined at 0.16d. per gallon in accordance with the Milk and Milk Products Acts (Northern Ireland), 1934 to 1937.

Under the Regulations creameries are required to distribute the equalization payments in accordance with the butter-fat content of the milk received from each supplier.

THE COST OF LIVING INDEX FIGURE.

The cost of maintaining unchanged the pre-War standard of living of working-class families at December 1st was 60 per cent. above the level of July, 1914, or the same as that at November 1st, 1937; but 9 points above the figure recorded at December 1st, 1936.

At December 1st, the index of retail prices of food in Great Britain and Northern Ireland, as ascertained by the Ministry of Labour, was 46 per cent. above that of July, 1914, as compared with 46 per cent. at November 1st, and 36 per cent. a year ago. The chief price changes during the period under review were decreases in the prices of butter and increases in those of eggs.

THE MARKETS DURING DECEMBER.

There were larger supplies of the principal vegetables marketed last month as compared with November, and price movements generally showed no definite trend. The average price of cabbage was 1d. firmer at 1/1d. per dozen; cauliflowers improved by 2½d. to 1/11½d. per dozen; leeks by ¼d. to 5¼d. per bunch, and carrots by 8½d. to 10/11½d. per cwt. Savoys, however, were ¾d. cheaper at 1/0½d. per dozen, and parsnips 1/9d. cheaper at 7/10d. per bunch. Garden turnips were also cheaper on the month, prices running from 1/- to 1/6d. per cwt., as against a figure of about 2/- a month ago. Parsley increased in supply, but prices remained at around 5¼d. per bunch.

In the provision section supplies of farmers' print and lump butter increased and average prices rose by ¼d. to 1/4½d. per lb. for print, and 1/4¼d. per lb. for lump. Hen and duck eggs also were more plentiful during December than in the preceding month, and prices as fixed by the Ministry of Agriculture applied.

In the poultry markets supplies of ordinary fowl, that is, hens, chickens and ducks, showed substantial increases on the month, but the numbers were rather below those for December, 1936. Prices also followed this trend, and were generally dearer than in November last, but cheaper than for the last month of 1936. The average price of hens rose on the month by 4¼d. to 2/0¼d. chickens by 6d. to 2/10¾d., and ducks by 7d. to 2/8½d. per head.

The Christmas poultry trade was in many respects satisfactory, notwithstanding the fact that prices generally were a little cheaper than in the month of December, 1936. Trade opened very quietly, and a great deal of uncertainty existed as to its future. This was in the main due to the increased imports of dead poultry during 1937, as compared with previous years, and to a certain extent to the fact that an estimate of supplies of turkeys in England in September, had shown an appreciable increase since an earlier census at the 4th June, 1937, was taken. During the first 11 months of 1937 imports of turkeys had increased on the year by 27 per cent. and ducks and geese by 44 per cent. Total imports of poultry during this period were actually 31 per cent. greater than in the similar period of 1936. Most of these increased supplies of turkeys came from Hungary, the exports from that country to Great Britain being doubled on the year. Increases also were recorded for Lithuania and the Netherlands. The total quantity of dead turkeys imported from January to November, 1937, amounted to 71,934 cwt., as against 56,807 for 1936. The figure for last year included 12,846 cwt. from Empire sources, and 59,088 from foreign countries. The following figures show the weekly imports of turkeys during the month of December last compared with a year ago :—

	Week ended 8th Dec.	Week ended 15th Dec.	Week ended 22nd Dec.	Week ended 29th Dec.
1937	12,543	15,279	63,653	60,727
1936	11,611	35,556	73,698	32,385

The above figures, extracted from the " Weekly Dairy Produce Notes," show that while imports fell away in the earlier part of December they remained sufficiently heavy to influence prices.

At the beginning of the season's trade quotations for Northern Ireland turkeys at London and Liverpool were in the region of 1/4d. per lb. dead weight for first quality, and from 1/- to 1/3d. for second quality. In the week before Christmas there was a tendency for prices to ease, but in Christmas week values hardened and prices for first quality rose to 1/5d. per lb., and seconds were selling at from 1/3d. to 1/4d. per lb. The quantities of turkeys marketed at local markets in Northern Ireland during December last were not much different from those of a year ago, but geese were offered in larger quantities. The following were the weekly prices of turkeys and geese per lb. live weight, at local markets compared with those ruling in 1936 :—

TURKEYS :

	1937	1936
Week ended 4th December	10d. to 1/1	1/2 to 1/4
,, 11th ,,	10d. to 1/1½	1/– to 1/4
,, 18th ,,	9d. to 1/2	9d. to 1/3
,, 25th ,,	9½d. to 1/1	9d. to 1/2

GEESE :

	1937	1936
Week ended 4th December	4d. to 5½d.	4d. to 5d.
,, 11th ,,	4d. to 6d.	4d. to 5½d.
,, 18th ,,	4d. to 7d.	4d. to 7d.
25th	5½d. to 8d.	4d. to 7d.

It may be noted that whereas turkeys were generally cheaper than a year ago, the average price per lb. live weight being estimated at 1/- per lb., as compared with 1/0½d. per lb. for December, 1936, geese were dearer and averaged 6d. per lb. last month as against 5½d. per lb. in the corresponding month a year ago.

EXTENT AND PRODUCE OF GRAIN CROPS, NORTHERN IRELAND, 1937.

The appended statement shows in tabulated form the estimated extent, total production, and average yield of the three principal grain crops in the year 1937, with comparative figures for the year 1936, and the average for the ten-year period 1927 to 1936. The acreage under wheat shows a decrease of 2,519 acres, or 36.7 per cent., oats a decrease of 8.073 acres or 3.0 per cent., and barley a decrease of 49 acres, or 1.7 per cent. The average yields of all corn crops are lower than in 1936, wheat showing a decrease of 1.1 cwt., oats 0.6 cwt., and barley 1.7 cwt. per statute acre. The average estimated yield of wheat and barley shows a decrease, and oats an increase as compared with the average for the decennial period.

	WHEAT.			OATS.			BARLEY.		
	Extent	Estimated total production.	Average Yield per statute acre.	Extent	Estimated total production.	Average Yield per statute acre.	Extent	Estimated total productino.	Average Yield per statute acre.
	Acres.	Cwt.	Cwt.	Acres.	Cwt.	Cwt.	Acres.	Cwt.	Cwt.
1937 ..	4,352	88,117	20.2	256,969	4,855,159	18.9	2,774	50,018	18.0
1936	6,871	146,186	21.3	265,042	5,174,871	19.5	2,823	55,678	19.7
Average for period 1927–1936	5,603	115,731	20.4	291,460	5,374,157	18.5	2,000	39,585	19.7

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934.

PIG PRICES FOR JANUARY, 1938.

The following announcement has been made by the Pig Industry Council.

PRICES FOR DEAD PIGS.

The prices per dead cwt. for dead pigs sold by producers to curers in Northern Ireland in January, 1938, are as follows :—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Partly Black Pigs.
c.1.0.21 to c.1.1.13	66/11	63/11	60/11	56/11	5/- below relevant Grade Price.
c.1.1.14 to c.1.2.3	70/11	67/11	64/11	60/11	
Weight Class. (Dead Weight)	Grade A.	Grade B.	Grade C.	U.L. or U.F.	
c.1.2.4 to c.1.2.14	70/11	67/11	64/11	61/11	
c.1.2.15 to c.1.3.14	70/11	67/11	64/11	61/11	
c.1.3.15 to c.2.0.0	67/11	64/11	61/11	58/11	
c.2.0.1 to c.2.0.14	61/11	58/11	55/11	52/11	

Pig Carcases c.1.0.0 to c.1.0.20 :—63/11.

The standard dead pig price (Grade B wt. cl. 2) is 7d. less than in December, 1937.

Authorised cuts :—

(a) Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.

(b) Broken ham (wet break)—12½% of the gross value of the carcase.

(c) Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase is condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer, the appropriate grade price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply. If the carcase is wholly condemned on account of disease the existence of which could not reasonably have been known to the producer before despatch to the curer the relevant Grade 2 or Grade B price (or fixed price if the carcase weighs not less than 1 cwt. 0 qr. 0 lb. and not more than 1 cwt. 0 qr. 20 lb.) shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcases weighing under c.1.0.0 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before despatch by the producer and subsequently condemned; emaciated or screw pigs; smelling pig carcases with definite indications of putrefaction, and pig carcases badly abused or damaged before being handed over by the producer to the curer.

Prices for Wiltshire Pigs Sold on Direct Contract.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for pigs delivered in respect of the month of January, 1938, are as follows:—

Weight Class. (Dead Weight)	Grade 1.	Grade 2.	Grade 3.	U.L. or U.F.	Unsuitable.
c.1.0.21 to c.1.1.13	76/11	73/11	70/11	66/11	63/11
c.1.1.14 to c.1.2.3	76/11	73/11	70/11	66/11	63/11
	Grade A.	Grade B.	Grade C.		U.L. or U.F.
c.1.2.4 to c.1.2.7	73/11	70/11	67/11		64/11
c.1.0.0 to c.1.0.20	Suitable 65/11		Unsuitable 63/11		
Over c.1.2.7	On the same basis as pigs sold dead.				

Prices for Live Pigs Sold to the Pigs Marketing Board (Northern Ireland).

In the case of pigs sold alive to the Pigs Marketing Board during January, 1938, the prices per live cwt., according to grade, are as follows:—

Live Weight.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.
c.1.1.14 to c.1.2.13	49/6	49/6	49/6	48/-
c.1.2.14 to c.2.0.0	57/9	55/6	53/3	U.L. or U.F. 50/3 48/-
c.2.0.1 to c.2.1.14	53/3	51/-	48/9	46/6
c.2.1.15 to c.2.2.7	51/-	48/9	46/6	44/3
c.2.2.8 to c.2.2.21	46/6	44/3	42/-	39/9

These prices do not apply to live pigs under c.1.1.14 or over c.2.2.21, live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside the weights c.1.2.0. to c.2.2.21 can be sold only to the Board.

Authorised Deductions.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy at present amounting to 1/-.

In addition to this amount, a deduction of 4d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

GRADING STATISTICS.

Table showing the percentages of pig carcases falling within the weight and grade classes indicated during November, 1937.

Under 1.0.21		c.1.0.21 to c.1.1.13					c.1.1.14 to c.1.2.3					Totals
Suitable	Unsuitable	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	Grade 1	Grade 2	Grade 3	U.L. & U.F.	U.	
.65	.08	1.72	.96	.31	.20	.02	3.51	4.14	2.10	1.13	.04	14.86

Grade A.				Grade B.				Grade C.				
1	2	3	4	1	2	3	4	1	2	3	4	
7.88	21.54	4.91	1.08	5.40	20.39	5.86	1.95	1.74	8.00	1.67	.58	81.00

Ungraded Carcases.						
Under Grade A measurements. U.L.	Over Grade C measurements U.F.	Wholly condemned U1.	Wholly black, injured or damaged U2.	Overweights, boars, sows, etc. X.	Partly Black Y.	
.02	2.38	.03	.56	1.12	.03	4.14
					Total	100%

These figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

During November the volume of trade in pig carcases was slightly reduced. The average price per head was 3/5d. dearer on the month at £5 13s. 3d., and the average price per cwt. rose by 1/- to £3 6s. 0d. Carcases were 2 lbs. heavier at an average dead weight of c.1. 2q. 24lb.

The following table gives the percentage results of an analysis of the purchase and grading statements furnished by Wiltshire Bacon Curers in respect of live pigs delivered on direct contract by producers during the month of November, 1937.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable U.L. or U.F.	Total
Under c.1.0.0 ..				—	.16
c.1.0.0 to c.1.0.20 ..				—	1.50
c.1.0.21 to c.1.2.3 ..	39.03	29.69	10.45	2.61	81.78
	Grade A.	Grade B.	Grade C.		
c.1.2.4 to c.1.2.7 ..	1.43	3.17	3.88	1.11	9.59
c.1.2.8 to c.1.3.14	1.03	2.38	2.61	.95	6.97
				TOTAL	100.00

The average net price per cwt. in respect of these deliveries works out at £3 12s. 10d., after making allowance for insurance and contribution to the Pigs Marketing Board.

The average weight works out at c.1.1.18., the net average price per pig being £5 2s. 7d.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks' period ended 18th December, was 10/1¾d. This figure has been calculated by the Ministry from returns collected from 10 representative centres in Northern Ireland.

The following is the ration upon which the feeding cost is based:—

Maize Meal	...	...	30%
Barley Meal	...	...	30%
White Pollards	...	...	20%
White Bran	...	...	10%
Meat Meal (60% Protein)		...	10%

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935 AND THE LIVESTOCK INDUSTRY ACT, 1937.

The following is a summary of payments made under these Acts up to and including **25th December, 1937**:—

Live Weight	Number of Animals	Total Amount paid. £ s. d.
England and Wales ..	3,691,943	8,756,945 11 6
Scotland	1,107,016	2,751,709 12 5
Northern Ireland ..	391,592	815,469 5 5
Total (United Kingdom)	5,190,551	12,324,124 9 4
Dead Weight.		
England and Wales ..	120,256	301,446 3 8
Scotland	35,420	97,442 6 11
Total (Great Britain) ..	155,676	398,885 10 7

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

PLOUGHING.—Ploughing should take precedence over all other farm work at this season so that it may be completed well in advance of sowing and planting time. Every opportunity should be taken, when soil conditions permit, to have the ploughing of stubble ground, still unfinished, completed, while the ploughing of leas should also be pushed forward with all speed.

Where it is intended to apply lime to last year's potato and turnip ground, the ploughing of this land should be undertaken at every opportunity so that there will be adequate time for applying the lime before the next crop is sown. The importance of applying lime to potato and turnip ground **after** and not **before** ploughing may again be pointed out. Lime sinks in soils of its own accord and soon falls below the reach of the roots of plants. If, therefore, the lime is ploughed down and the land is not ploughed again for a number of years, little benefit will be obtained from it.

PASTURE IMPROVEMENT.—There is still time to apply lime and phosphatic manures to pasture land, but this work should be carried out without delay if results are to be obtained in the incoming grazing season. From 1 to 2 tons of burnt lime per statute acre is a suitable dressing for grassland, while a dressing of from 6 to 8 cwt. of high grade basic slag, or Gafsa rock phosphate, or Semsol, per acre, will have a marked effect on both the quality and quantity of herbage produced throughout the summer. As explained in last month's Notes, however, Gafsa rock phosphate should not be applied to land which has recently been limed, but the application postponed until next autumn.

Harrowing the land thoroughly before liming or manuring will facilitate the action of the lime or manure, as well as encourage a fresh growth of grasses and clover in the pasture.

LAND IMPROVEMENT WORKS.—Labour not engaged at horse work can be usefully employed at this season at improvement works, such as drainage, fencing, road-mending, etc.; land drainage work should be carried out before the rush of spring work begins and it should be noted that unless land is properly drained, the full benefits from liming and manuring will not be obtained.

Farmers, contemplating the carrying out of drainage work, are reminded that grants amounting to three-quarters of the total amount paid in wages to workmen can be obtained under the Land Improvement Scheme for the carrying out of approved drainage and other improvement works on the farm. Full particulars regarding this Scheme will be sent on request.

The cutting and trimming of farm hedges should also be attended to now. Hedges which have been neglected for a number of years and which have become overgrown can be greatly improved if laying, which consists of bending and wattling selected young shoots horizontally along the line of the hedge and subsequently trimming off any surplus material, is carried out. An article on the improvement and restoration of old farm hedges is given on page 484 of this report.

Planting of Forest Trees.—This work can also be undertaken at this time when slack periods occur and when soil conditions are suitable. Full particulars regarding suitable species to plant for timber production, shelter and ornamental use, are given in Leaflets Nos. 62 and 72. Supplies of young trees of various species can be obtained by farmers from the Ministry's nurseries in lots of 1,000 or more at the reduced price of 30/- per 1,000. Copies of this Scheme and of application forms will be sent free, on request.

Carting of Farmyard Manure.—During spells of frosty weather, the carting of farmyard manure to stubble ground in preparation for the growing of potatoes and turnips may, with advantage, be carried out. This enables considerable time to be saved during the busy periods of spring. The heap should be kept tidy and compact and it is a good plan to cover the top of the heap, when completed, with a layer of soil so that loss of fertilising materials may be minimised as far as possible.

Surplus supplies of farmyard manure are best applied to meadow land for the growing of hay. A moderate dressing of from 15 to 20 tons per acre is suitable for this purpose. It should be noted that lime and farmyard manure should not be applied to land at the same time as, if this is done, there will be a serious loss of manurial material due to the action of the lime on the manure. It is best to allow a period of at least one year to elapse after the application of farmyard manure before liming is carried out on the same field.

Potatoes.—Potatoes stored in houses should be sorted, while those in pits should be lifted when opportunity offers. Seed of maincrop varieties should be boxed as soon as possible so that they may be properly sprouted before springtime. As prices ruling for potatoes are low this year, a good opportunity is afforded of obtaining supplies of seed from healthy crops which were inspected and certified during last summer. Lists giving the names and addresses of growers of such crops can be obtained free, on request, from the Ministry.

Oats.—Supplies of seed oats should also be ordered and obtained in good time. The results of the oat variety trials carried out last season by the

Agricultural Instructors are given on page 481. The produce of specially selected stocks of some of the varieties included in these trials may be available in some districts, and farmers who desire seed from these stocks should consult the Agricultural Instructor as soon as possible.

SEASONAL LIVESTOCK NOTES.

Inclusion of Potatoes in Rations for Stock.—In view of the low market prices prevailing for potatoes, they can with advantage be included in rations for stock. Potatoes are an excellent food for pigs, but they should be cooked before being fed. The feeding of excessive quantities of potatoes should not be adopted, however, as this practice often leads to the production of pot-bellied pigs, particularly in the case of young pigs. The proportion of cooked potatoes in the ration should not exceed 2 lb. to 1 lb. of meal mixture for pigs up to 4 months old or 4 lb. to 1 lb. of meal mixture from 4 months onward. The total amount of potatoes fed should not exceed 12 lb. per head daily to pigs being fattened. Examples of suitable meal mixtures to feed along with potatoes are given in Leaflet No. 35.

Potatoes can be used to replace part of the root (turnips or mangels) ration for dairy cows and for fattening cattle. They should be pulped or "fingered" and fed raw, commencing with about half a stone per head daily and increasing gradually up to a maximum of 2 stones per head daily. If the cattle show any signs of scouring, the amount of potatoes fed should be reduced immediately. Potatoes which are green or sunburned, or have sprouts, are liable to cause poisoning in stock, if fed raw. Accordingly, the sprouts should be removed before feeding and care exercised to ensure that reasonably sound potatoes are used.

Use of other Home-Grown Foods in Stock Rations.—In addition to utilising potatoes for feeding purposes, other foods produced on the farm, such as oats, barley and wheat can be included in meal mixtures with good results, and their use will reduce expenditure on purchased foods considerably. The use of supplies of separated milk, skim milk, or buttermilk, for pigs, calves and poultry, will also lower the cost of feeding by obviating the necessity of purchasing expensive protein-rich foods, such as fish meal, meat meal and soya-bean meal. Milk is excellent for all classes of young, growing stock and, where supplies are available, farmers are strongly advised to utilise this home-produced food in preference to purchasing expensive protein foods or proprietary rearing mixtures.

Control of Amount of Meals Fed to Stock.—In addition to effecting economies in the feeding of stock by utilising home-grown foods to the best advantage in rations, careful attention should also be given to the amount

of meals fed so that stock, while receiving an adequate allowance for their particular needs, are not being overfed. Overfeeding, besides being a wasteful practice, may also lead to the development of digestive troubles, and may, accordingly, actually retard good thriving. The amount of meals to be fed should be determined by weighing and not by measuring, since the volume of an equal weight of the different kinds of meals varies considerably, and it is impossible to ascertain the desired amounts if bulk only is considered.

For dairy cows from 3 to 3½ lb. of a balanced meal mixture should be fed per head daily for each gallon of milk produced, along with a moderate allowance of hay and roots.

Store cattle can be kept in a forward thriving condition by feeding about 3 lb. per head daily of a meal mixture, such as that given on page 480, for "young growing cattle" in addition to hay or straw and roots.

For fattening cattle, the amount of meals fed should be increased gradually by about 1 lb. per head monthly, from 4 lb. per head daily at the commencement of fattening, until from 6 to 8 lb. daily, according to age and size, is being given at the end of the fattening period.

A useful guide to the amount of meals required for fattening pigs is to allow about 1 lb. of meal for each month of age with a maximum of from 6 to 7 lb. per head daily towards the end of the fattening period.

Purchase and Storage of Meals.—Attention is directed to the care necessary when purchasing meals or meal mixtures to ensure that they are in a fresh condition. Frequently, serious digestive troubles and even deaths have occurred following the use of stale or badly stored meals. The smell of a sample is a good guide to its freshness and on no account should samples be purchased that have a musty smell or are infested with mites, even although they are offered at attractive prices.

Care should also be given to the storage of meals on the farm. They should be kept as dry as possible and unless good storage facilities are available it is not a wise plan to purchase very large quantities which will require to be kept for a prolonged period before use. The use of wooden or iron bins for storage purposes is recommended, as these receptacles not only aid in keeping feeding-stuffs dry, but also prevent vermin from gaining access to them. The bottoms of wooden bins should be lined on the outside with tin or sheet iron to prevent damage from vermin.

Sheep.—The breeding flock of sheep should be well fed and managed from now onwards, particularly if early lambs are expected. As a supplement to the grass, a small allowance of a mixture of equal parts oats, bran and

decorticated earthnut cake, along with a few turnips daily, will maintain the ewes in good condition for lambing. Good feeding before lambing will lead to the production of stronger and more vigorous lambs and will also increase the flow milk from the ewes, thus enabling them to feed their lambs well. Too many turnips, however, should not be fed to ewes which are heavy in lamb, as this practice tends to make lambing more difficult.

A fresh field of pasture should be left ungrazed from now onwards so that the ewes may have clean, fresh grass after lambing.

Substitute for Barley Meal in Pig Rations.—As barley meal is difficult to obtain and as the price is high, pig feeders should consider the advisability of using tapioca root flour as a substitute in pig fattening rations. The latter food is now selling at much lower rates than barley meal and experiments have shown that it can be used to replace barley meal with good results and that it has a beneficial effect on the quality of the fat. When feeding tapioca root flour, it is a wise plan to include a small allowance of a flaked meal, such as flaked maize, in the ration to improve the texture and to prevent it from becoming "pasty."

SEASONAL GARDEN AND ORCHARD NOTES.

Planting and Pruning.—The planting of fruit trees and bushes should be completed as soon as possible, and, during favourable weather, pruning should be proceeded with so as to get this work finished if possible before spraying begins.

Spraying Equipment.—The spraying apparatus, including guns, lances, hoses, etc., should be thoroughly overhauled and all defective parts should be renewed now before spraying starts. Neglect to do this may result in a breakdown when spraying is in progress involving delay and possibly a reduction in the value of the crop.

Winter Spraying of Fruit Trees.—Now is the time to carry out the spraying of apple trees with tar-distillate washes to destroy the eggs of aphides and suckers. This work should be done only when the trees are dry and when there is no immediate prospect of rain. Spraying with tar-distillate washes should not take place either when the trees are frozen or covered with a frosty rime as the emulsion is liable to separate out when the temperature is too low. If night frosts are expected, spraying should cease early enough each evening to allow of the spray drying on the trees before the temperature falls to freezing point. The tar-oil distillate should be stored in a building that is frost proof. The pumps, hoses, etc., should be emptied of spray material when work is finished daily.

Hot Beds.—Where a supply of horse manure is available a hot bed can be prepared for raising an early supply of such vegetables as Brussels sprouts, cauliflower, onions and lettuce. As the fresh manure is collected it should be mixed with about half its bulk of old leaves, or if these are not obtainable, with old short manure. It may be stored under cover or in the open, but if in the open it should be made into a rounded heap brought to a point so as to throw off the rain. Each subsequent supply of manure should, after mixing with leaves or old manure, be thoroughly incorporated in the heap, turning the heap so the outside material is turned inside and vice versa. When enough manure has been collected the material should be turned at least 3 times at intervals of 3 or 4 days. After the final turning the bed should be prepared. It should be made from 18 to 20 inches wider and longer than the frame to be used. The fermenting material should be placed in layers 8 or 9 inches deep and each layer firmed by treading. This firming ensures that the heat is produced more slowly but over a longer period than if the material were piled up loosely. When the frame has been placed in position more of the manure should be packed outside it. The "lights" should then be placed on the frame, but they should be raised a few inches at the top for a few days to allow steam and noxious gases to escape.

Seed Sowing in Hot Frames.—A suitable compost for raising seedlings consists of:—

Loam	...	5 parts.
Leaf soil	...	4 parts, or 2 parts peat moss litter.
Sand	...	2 parts.

To each bushel of this compost should be added 1½ oz. superphosphate, together with a little lime or chalk. Where the practice of sterilizing the soil is carried out (as in nurseries) the materials should be sterilized separately and then mixed, the superphosphate and lime should be added **after** the sterilizing and not **before.** The boxes, after filling with the compost, should be pressed down firmly made level and soaked with water. When drained, the boxes should be ready for sowing. Seeds should be sown thinly in shallow boxes of compost and these plunged in the fermenting material inside the frame. After the seedlings appear the boxes should be kept close to the glass so as to encourage sturdy growth. When large enough the seedlings may be pricked off into other boxes and eventually hardened off before being finally planted ouside.

Shallots and Potato Onions.—Towards the end of January if the ground can be got in a moderately dry state, shallots and potato onions may be planted. In districts where the soil is light and warm a sowing of broad beans may be made out of doors early in February.

Carrots and Parsnips.—The heaps of stored carrots should be examined and any sprouting tops removed from the roots.

Quantities of parsnips should be lifted and stored during mild weather so that a supply may be available for use when the ground is frozen or covered with snow.

Seed Potatoes.—The supply of "seed" potatoes should be carefully examined for the presence of green fly. If these are found the store should be fumigated with a good insecticide, such as nicotine. Alternatively tubers may be sprayed. It is important that seed potatoes should be kept free of these insects as they are chiefly responsible for infecting healthy tubers with certain virus diseases.

General.—A supply of stakes for the support of peas, herbaceous plants, etc., should be obtained and prepared so that these may be available when required.

SEASONAL POULTRY-KEEPING NOTES.

This is a particularly important time on the poultry farm as much of the success to be obtained depends on the results obtained during the hatching season.

Hatching.—Hatching should now be proceeded with to full capacity so that sufficient pullets may be produced for egg production next autumn. To avoid disappointment it is always wise to err on the side of having too many pullets rather than too few; surplus pullets, provided they are of good quality, can always be sold at remunerative prices. It may be taken that for each pullet suitable for retention as a layer, upwards of six eggs may be set. It is important, however, to bear in mind the accommodation available when planning hatching operations as it is a very foolish practice to attempt to rear a greater number of chickens than the accommodation permits.

Selection and Storage of Eggs for Hatching.—Care and attention to the selection and storage of hatching eggs are important if good hatching results are to be obtained. As was pointed out in last month's report, good hatching eggs are only obtained when the breeding stock is carefully selected and fed and managed properly. Even under ideal conditions, however, there will be some eggs which will not be suitable for hatching purposes. Eggs under 2 oz. in weight, abnormally large eggs, or eggs which are badly shaped or have thin shells should not be set.

Good hatching eggs are often spoiled through bad storage. While the best results are obtained from the freshest eggs, some days must necessarily

elapse on most farms from the time the eggs are laid until they are set. At the most, however, eggs for hatching should not be more than a week old.

During storage the eggs should be kept in an airy room where the temperature is more or less uniform and does not fall below 40 degrees, Fahrenheit, nor rise above 70 degrees. Excessive evaporation from the eggs should be avoided as it is detrimental to hatching results. This can be largely prevented by placing the eggs in fresh bran or chaff or even wrapping them in newspapers. It is also beneficial to turn the eggs once daily during storage. A suitable and convenient receptacle for storing hatching eggs is an ordinary egg case. If the top of the case is securely fastened, the eggs can be easily turned by turning the case over on to one side each day.

Management of Incubator.—Efficient management and running of the incubator is essential if good results are to be obtained. The instructions given with the machine should be carefully followed and adequate ventilation and moisture supplied throughout the hatch. The room in which the incubator is placed should be well ventilated, but free from draughts, and so constructed that extremes of temperature will not occur. A temperature between 60 and 70 degrees, Fahrenheit, should be maintained in the room. It should be remembered that fertile eggs during the period of hatching contain living germs which if not properly nourished will not develop normally or will die. A constant supply of fresh air is part of the essential nourishment of the developing chick while a proper supply of moisture is also important. The incubator should be set up perfectly level, using a spirit level for the purpose. If not level, a uniform air temperature cannot be maintained throughout the machine and poor hatches will likely result. The incubator should be placed away from walls and on a slatted platform if it is not provided with legs. This is to ensure a thorough circulation of air all round it. If placed close to a wall it will be found that the temperature inside the machine will be lower next the wall than elsewhere on the egg tray. The wick of the lamp should be trimmed daily and only a good grade of oil used. Further hints on the running of incubators are given in Leaflet No. 20.

Avoidance of Chills.—Chills, both during incubation and after hatching, are the most common cause of loss in chicken rearing, and every precaution should be taken to guard against them. The fact that eggs can be chilled before being placed in the incubator and hatchability destroyed should not be overlooked. An instance of this occurring during the past spell of severe frosty weather has been brought to the notice of the Ministry. It is, therefore, of particular importance that, during such weather, eggs be collected frequently, at least twice daily from the nests and stored in a room where the temperature does not fall below freezing point. Leaving eggs in the poultry

house overnight will render them unfit for hatching. During incubation the eggs should not be taken out for testing after the fourteenth day, otherwise chills may be contracted and the chicks die in the shells before hatching actually takes place.

Before removing the chickens from the incubator, the temperature of the machine should be lowered gradually until it reaches the same level as that of the hover or brooder to which the chicks are to be transferred. The temperature under the canopy of the hover should be about 90 degrees, Fahrenheit, when the chickens are first placed in it.

A temperature of from 85 to 90 degrees, Fahrenheit, should be maintained in the hover during the first week and care taken to prevent the chickens from wandering too far from the source of the heat during this period. A temporary frame of light boards placed around the hover will prevent this occurring and will also assist in preventing floor draughts in the house from reaching the chickens.

Unsatisfactory Hatches.—Should unsatisfactory hatches be obtained, or an abnormal number of deaths occur, the local Instructor should be consulted for advice as to the methods to adopt to improve matters. The Poultry Instructors, whose names and addresses are given on page 491 of this Report, will visit and advise on matters relating to poultry-keeping free, on request. Post-mortem examinations and reports on chicks can also be obtained free by sending one or two dead specimens to the Ministry's Veterinary Research Division, The Farm, Stormont, Belfast. Postage on parcels containing dead chicks should be paid.

Fresh Ground. The importance of providing fresh, clean ground for chicken rearing cannot be over-emphasised. Many of the losses sustained and unsatisfactory results obtained during the rearing stages are due to running the chickens on ground which has been used repeatedly for rearing or on which adult stock have been kept. Land which has been newly laid down to grass is most suitable for young chickens and, if this is available, it should be used for this purpose.

Liming of Ground for Poultry.—Land on which poultry have been kept and which cannot be ploughed conveniently will benefit considerably from an application of lime. A dressing of about 2 tons per statute acre of burnt lime is suitable for this purpose. Liming will sweeten the soil and will also aid in preventing outbreaks of parasitic diseases. The provisions of the Land Fertility Scheme apply in the case of lime applied to land used for poultry.

WINTER RATIONS FOR STOCK-FEEDING.

At current prices of feeding stuffs the following are economical meal mixtures for feeding to different classes of farm stock. Where supplies of separated milk, skim milk or buttermilk are available the protein rich foods, i.e., soya bean meal, meat meal and fish meal, and the mineral mixtures may be omitted from the rations for pigs and poultry.

For Dairy Cows

(1) 3 parts crushed oats
2 parts maize meal
1 part red bran
2 parts decorticated earthnut cake
With 3 lb. mineral mixture (equal parts ground limestone or chalk, steamed bone flour and common salt) to each cwt. of meal mixture.

(2) 2 parts maize meal
1 part pollard
1 part bran
1½ parts decorticated cotton cake or
1¼ parts soya bean meal
with mineral mixture as for (1).

For Fattening Cattle

2 parts crushed oats
2 parts maize meal
1 part decorticated earthnut cake

For Young Growing Cattle

2 parts crushed oats
1 part maize meal
1 part decorticated earthnut cake
with 2 lb. mineral mixture (3 parts ground limestone, 1 part common salt) to each cwt. meal mixture.

For Fattening Pigs

(1) 2 parts tapioca root flour
2 parts maize meal
2 parts pollard
1 part flaked maize
1 part bran
1 part soya bean meal
with 2 lb. per cwt. of meal mixture of the mineral mixture specified for young cattle.

(2) 3 parts tapioca root flour
2 parts maize meal
1 part flaked maize
2 parts pollard
1 part bran
1 part meat meal
with 1 lb. mineral mixture as above to each cwt. meal mixture.

For Sows with Litters

3 parts maize meal
1 part flaked maize
2 parts red bran
2½ parts brown pollard
1½ parts high grade meat meal
with from 1 to 2 lb. mineral mixture as above to each cwt. meal mixture.

For In-pig Sows

4 parts maize meal
4 parts brown pollard
2 parts red bran
with 1 lb. mineral mixture to each cwt. meal mixture.

For Young Chickens

4 parts bran
2 parts sharps (fine pollard)
1 part Sussex ground oats
1 part maize meal
1 part fish meal (60 per cent. protein).

For Growing Birds

3 parts bran
4 parts sharps
2 parts Sussex ground oats
1 part maize meal
¼ part fish meal, or meat meal.

For Laying Pullets

(1) 4 parts pollard
2 parts bran
2 parts maize meal
1 part Sussex ground oats
1 part fish meal (60 per cent. protein).

(2) 4 parts pollard
2 parts bran
2 parts maize meal
1 part Sussex ground oats
½ part fish meal
¾ part soya bean meal
with ½ lb. common salt per cwt. meal mixture.

For Breeding Stock

3 parts bran
2 parts pollard
2 parts coarsely ground wheat
2 parts maize meal
1 part fish meal or meat meal or milk
with 1 pint cod-liver oil to each 4 stones of mash.

RESULTS OF OAT VARIETY TRIALS, 1937.

As in previous years two series of oat variety trials were carried out by the Agricultural Instructors during 1937. In one series certain varieties which were considered to be suitable for the better classes of soils were tested under comparable conditions, while in the other series, varieties which suit the poorer soils in hilly districts were included.

Varieties Suitable for Good Soils.—The varieties included in these trials included those which in previous years had given the most promising results and also newer varieties and strains, some of which were produced at the Ministry's Plant Breeding Station. Eight varieties were tested and the following table gives the results obtained.

Average Yields per Statute Acre.

No. of Centres.	King.		Crown.		Stormont Arrow.		Utility.		Stormont Iris.		Onward.		Elder.		Victory.	
	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.
10			33 2	34	23 0	37	21 1	37								
9			24 1	35	23 1	37	21 1	38			23 3	42				
6			23 0	32	23 2	34	21 0	36			21 3	28	22 1	33		
4	23 0	38	25 2	38	24 0	38	20 3	39			25 2	34				
4			20 1	28	22 3	33	20 0	32			20 2	26			16 2	32
3			26 2	39	23 0	42	23 0	42	21 2	42						
2			30 1	46	23 3	44	24 0	47	24 1	46	30 3	43				

As all eight varieties were not grown at each centre, it is not possible to give the average yields obtained from all varieties in respect of all the centres where the trials were carried out, but the average yields per statute acre from groups of varieties which were grown at a similar number of centres are given. For example, Crown, Stormont Arrow and Utility were grown at 10 centres, and the average yields obtained from all these centres are given in the first line of the table. Similarly Crown, Stormont Arrow, Utility and Onward were grown at 9 centres, and the average yields obtained from these 9 centres are given in the second line of the Table, and so on.

It will be observed that the varieties Crown and Stormont Arrow have given high average yields. At some centres Crown gave heavier yields than Stormont Arrow but at others the latter proved superior to Crown. It is interesting to record that these two varieties have been grown alongside each other in these trials since the year 1929 at a total of 106 centres. The true average yields per statute acre obtained from these centres were, Crown, 22 cwt. 2 qrs. of grain and 33 cwt. of straw, Stormont Arrow 21 cwt. 2 qrs. of grain and 36 cwt. of straw. Thus, Crown gave a yield of 1 cwt. more grain per acre but 3 cwt. less straw than Stormont Arrow. Both varieties can be relied on, however, to produce heavy yields on good soils. Stormont Arrow, which was raised at the Ministry's Plant Breeding Station from a cross between Black Potato and Victory, has short stiff straw and, consequently, is not so liable to lodge as other varieties.

Onward is a new variety, introduced by Messrs. Gartons, Warrington, England, and was included in these trials for the first time in 1937. It produced very satisfactory yields at most centres. This oat has large-sized grain and strong straw which stands well.

King is one of the older varieties with strong straw which has given consistently high yields in these trials, but both Crown and Stormont Arrow, have generally proved superior to it in yielding capacity.

Stormont Iris is one of the newer varieties which ripens early. It was produced at the Ministry's Plant Breeding Station from a cross between Supreme and Victory. In the two previous years' trials and in last season's tests it produced very heavy yields.

The two varieties Elder and Utility are of the potato type and have also given good yields. At most centres, however, greater yields were obtained from some of the other varieties grown.

Varieties Suitable for Poorer Soils in Hilly Districts.—In these trials, the object was to obtain information as to the cropping capabilities of some of the varieties likely to succeed best when grown on the poorer soils in mountainous districts. Six varieties were grown at all centres where the tests were conducted. The varieties included an oat raised at the Ministry's Plant Breeding Station from a cross between Potato and Sandy, and now known as Stormont Kern, a selection of a short-grained type of Tyrone Tawny, made and bulked at the Plant Breeding Station, Stormont; a selection of Sandy, called Gordon Sandy, a selection of Poland named Tam Finlay, McGillsmith Potato and Early Miller. The last named variety was grown in the trials carried out on good soils in 1936. As Early Miller ripens very early and is of the potato type, it was considered that it might be suitable for cultivation in the later and poorer districts. Accordingly, it was included in the trials carried out last season in poor districts.

Particulars of the average results obtained per statute acre from the 12 centres at which the tests were carried out, along with the average yields from the two previous years' trials, where similar varieties were grown are given in the following table. The true average yields for the three years' tests at 27 centres are also given.

Average Yield per Statute Acre.

Year	No. of Centres	M'Gill-smith Potato		Short-Grained Tyrone Tawny		Gordon Sandy		Stormont Kern		Tam Finlay (Poland)		Early Miller	
		Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.	Grain c. q.	Straw cwt.
1937	12	17 1	34	15 3	32	16 3	32	16 2	31	16 1	36	13 3	24
1935/36	15	17 3	34	17 3	33	18 2	34	18 3	32	19 0	37	—	—
1935 to 1937	27	17 2	34	16 3	33	17 3	33	17 3	32	17 3	37	—	—

The variety Stormont Kern has given consistently high yields in the three years' trials. It ripens earlier than Tam Finlay (Poland) and may thus prove to be a valuable substitute for that variety in districts where Tam

Finlay or Poland is widely grown. The latter oat can be relied on to give a satisfactory yield and is a particularly useful variety for exposed situations and for poor cultural conditions generally. It is, however, late in ripening.

Gordon Sandy has given good yields, equalling those obtained from Stormont Kern and Tam Finlay in respect of the three years' tests. McGillsmith potato gave the heaviest yield in the 1937 trials, but the true average yield obtained from this variety for the three years' tests was slightly lower than that obtained from either Stormont Kern, Gordon Sandy or Tam Finlay. With the exception of Early Miller the yields obtained from the short-grained type of Tyrone Tawny have been lower than those from the other varieties. Tyrone Tawny is very useful for growing on poor soils and is characterised by great "stooling" capacity. The short-grained type has shorter and plumper grain than that of the ordinary Tawny in cultivation.

The yields obtained from Early Miller have been disappointing and it would appear that this variety is not very suitable for growing in the poorer districts where these tests were carried out.

Farmers who desire seed of any of the varieties mentioned in either of these series of trials should consult the Agricultural Instructor for the district for information regarding sources of supply of seed. The names and addresses of the various Instructors employed by County Committees of Agriculture, are given on page 491.

RESTORATION OF OLD HEDGES.

A hedge forms a very useful farm fence so long as it is kept in good condition for it not only acts as an efficient fence but also affords considerable shelter to stock.

When hedges are not trimmed annually and given proper attention holes and openings appear and the hedges become practically useless as a fence for sheep and cattle. With proper treatment, however, such hedges can be restored.

Overgrown, patchy hedges are often hacked down leaving the old stumps from one to two feet high. This practice is to be condemned as there is no effective fence for some years and no provision is made for filling old gaps or openings. The proper treatment for such hedges is what is known as "laying." "Laying" can be carried out now or at any convenient time before the end of March. As a first step all undesirable plants, such as Bramble, Dog Rose, Honeysuckle, etc., and all dead or decayed stumps should be cut out, the ditch back cleaned out, and the ditch itself repaired if necessary.

The young growths for bending horizontally along the hedge as described below should be chosen from the most vigorous stools and should be as straight and as long as possible. Shoots arising very near the base of the stool are to be preferred. Others not required should be cut out leaving stumps from 2 feet to 3 feet high. It is not advisable, however, to cut out too many of the young shoots in the first instance as any surplus can easily be removed when the "laying" has been completed.

If there are gaps or holes in the hedge or if the stumps are more than 2 feet apart, stakes cut, if possible, from the surplus material from the hedge should be driven into the ditch so as to have a continuous row of stumps (or stakes) not more than 2 feet apart. The selected young shoots should then be half cut through with an upward cut whenever possible, bent downwards and wattled or interlaced between the stumps. It is a mistake to put in too much material as sufficient room must be left to allow for young growth.

When the "laying" has been completed the smaller protruding twigs should be trimmed, and if there is any tendency on the part of the "laid" shoots to spring upwards they may be secured by interweaving thin hazel rods between the tops of the stakes. This is preferable to the practice of placing sods on the shoots as the interweaving of the hazel rods adds additional strength to the top of the hedge.

Once a hedge has been properly "laid" it can be kept in good condition for many years by annual trimming. The trimming should be carried out with a proper, well-sharpened hedge knife and not with a hook or a slasher. All cutting should be done from the bottom upwards with an upward swing of the knife. The ultimate object of the trimming should be to form a wedge-shaped hedge, wide at the foot and narrow at the top.

RESULTS OF TEST COMPARING KING EDWARD AND GLADSTONE POTATO VARIETIES.

King Edward is a variety of potato which is very popular on the English market, where it commands a much higher price than any other main-crop variety. Unfortunately it is a non-immune variety. Quite apart from this disadvantage, however, it is a poor cropper in this country, and the yields obtained do not justify its general cultivation on a commercial scale. During recent years a new immune early main-crop variety called Gladstone has been introduced. Life the tubers of the popular King Edward, those of Gladstone are white-skinned with splashes of pink, and are of excellent cooking quality. Owing to these characteristics the variety Gladstone has already been used as a substitute for King Edward to a considerable extent, and should it prove to

be a reasonably good cropper it would be a variety which would justify cultivation for shipment both for ware and seed purposes. Moreover, being immune from Black Scab disease it could be planted in districts where King Edward could not.

In order to compare the cropping capabilities of these two varieties, trials, in which both Gladstone and King Edward were grown side by side under similar conditions, were carried out at 4 centres in 1937, in bog soils, and the results obtained are as follows :—

Centres at which test was carried out	King Edward								Gladstone							
	Ware		Seed		Chats		Total		Ware		Seed		Chats		Total	
	T.	c.	T.	c.	T.	c.	T	c..	T.	c.	T.	c.	T.	c.	T.	c.
Dervock	3	4	1	7	1	3	5	14	6	6	–	11	1	3	8	0
Bushmills ..	5	13	1	3	2	7	9	3	10	10	1	10	1	11	13	11
Ballymoney ..	4	3	3	0	–	11	7	14	7	12	1	15	–	11	9	18
Ballymoney ..	6	0	2	16	1	4	10	0	12	8	2	3	–	19	15	10
Average yields (4 centres)	4	15	2	2	1	6	8	3	9	4	1	10	1	1	11	15

It will be seen that considerably heavier yields were obtained from Gladstone than from King Edward. Gladstone produced an average yield of 4 tons 9 cwts. of ware potatoes greater than King Edward, while the total average yield was also heavier by 3 tons 12 cwts. Accordingly, the results of these trials would indicate that from the point of view of yielding capacity Gladstone is much superior to King Edward. It may also be mentioned that in the trials carried out by the Agricultural Instructors during the past two years Gladstone gave an average total yield of 13 tons 17 cwts. at 21 centres. The variety King Edward was not included in these trials.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

Inspections of Bulls and Boars.—The inspection of bulls for licences began on the 19th January. All bulls calved during the period 1st January, 1937 to 30th June, 1937, should be entered for these inspections. Any outstanding applications for inspections for boars farrowed during the months of July, August and September, 1937, should also be sent to the Ministry at once. The keeping of unlicensed bulls or boars is likely to lead to a prosecution.

Premium Bulls and Boars.—Farmers desiring to keep premium bulls and boars in 1938 should make immediate application to the Secretary or Agricultural Organiser of the County Committee of Agriculture. It should be noted that no premiums will be granted in respect of Large White Ulster boars.

Seed Supplies.—Farmers desiring fresh supplies of seed oats and potatoes are recommended to obtain these as soon as possible. Particulars regarding the most suitable varieties of oats to sow can be obtained from the Agricultural Instructor for the district while lists giving the names and addresses of growers of healthy stocks of potatoes which have been certified by the Ministry can be obtained free on request. Supplies of barley seed should also be ordered or obtained in good time as there is sometimes difficulty in obtaining this seed when sowing time arrives.

Drainage Scheme.—Financial assistance for the carrying out of drainage and other land improvement works can be obtained under the Ministry's Loan Drainage Scheme. Particulars will be sent on request.

County Poultry Stations.—Lists of holders of County Poultry Stations have now been issued by the County Committees of Agriculture, and copies can be obtained free on application to the Secretary or Agricultural Organiser of the Committee of Agriculture for the County. The birds at these stations have all passed the test for Bacillary White Diarrhoea disease and hatching eggs can be obtained at moderate prices. Lists giving the names and addresses of duck, goose and turkey station-holders can also be obtained from the Secretary or Agricultural Organiser of the County Committee of Agriculture.

REGISTER OF ACCREDITED POULTRY FARMERS.

The Register of Accredited Poultry Farmers in Northern Ireland for the hatching season 1937-38 is now available for distribution, and copies may be obtained free, and post free, from The Secretary, Ministry of Agriculture, Stormont, Belfast. This Register contains the names of breeders who have complied with the provisions of the Ministry's Scheme for the Registration of Accredited Poultry Farms, and hatching eggs and birds may be purchased from these farms with a minimum of risk as regards disease.

LECTURES.

The following lectures have been arranged by County Committees of Agriculture:—

County.	Day & Date	Centre.	Time.	Subject.
Armagh	Thurs., 20th Jan.	Cross Roads P.E. School.	8-0 p.m.	Lime and the Land
,,	Wed., 26th Jan.	Crossdall P.E. School.	8-0 pm..	do.
,,	Wed., 26th Jan.	The Hut, Kilmore.	7-30 p.m.	Veterinary Lecture.
,,	Wed., 26th Jan.	Breagh, Church Hall.	7-30 p.m.	Apple Production.
,,	Fri., 28th Jan.	Clintyclay P.E. School.	7-30 p.m.	do.
,,	Fri., 28th Jan.	Aughanduff P.E. School.	7-30 p.m.	Veterinary Lecture.
,,	Tues., 1st Feb.	Salter's Grange P.E. School.	8-0 p.m.	Lime and the Land.
,,	Tues., 1st Feb.	Milltown P.E. School.	7-30 p.m.	Apple Production.
,,	Wed., 2nd Feb.	Breagh Church Hall.	8-0 p.m.	Lime and the Land.
,,	Wed., 2nd Feb.	Aughavilly P.E. School.	7-30 p.m.	Veterinary Lecture.
,,	Thurs., 3rd Feb.	Richmond P.E. School.	7-30 p.m.	Apple Production.
,,	Tues., 8th Feb.	Tullysarran P.E. School.	7-30 p.m.	do.
Down	Fri., 14th Jan.	Drumlough P.E. School.	8-0 p.m.	Winter Egg Production.
Fermanagh	Fri., 21st Jan.	Moybane P.E. School.	7-0 p.m.	Land Fertility. Scheme.
,,	Fri., 28th Jan.	Moyglass P.E. School.	7-0 p.m.	do.
,,	Fri., 4th Feb.	Littlemount P.E. School.	7-0 p.m.	do.
,,	Fri., 11th Feb.	Roscor West P.E. School.	7-0 p.m.	Care and management of Pasture and Meadow.
,,	Fri., 18th Feb.	St. Patrick's (Hollywell) P.E. School.	7-0 p.m.	do.

County.	Day & Date.	Centre.	Time.	Subject.
Londonderry	Mon., 17th Jan.	Burnfoot P.E. School.	7-0 p.m.	Profitable Poultry-keeping.
,,	Wed., 19th Jan.	Killymallaght P.E. School.	7-0 p.m.	do.
,,	Fri., 21st Jan.	Enagh P.E. School.	7-0 p.m.	do.
,,	Fri., 21st Jan.	Culcrow Old School.	7-0 p.m.	Land Fertility Scheme.
,,	Mon., 24th Jan.	St. Aidan's Hall, Bellarana.	7-0 p.m.	Profitable Poultry-keeping.
,,	Wed., 26th Jan.	Ballywildrick P.E. School.	7-0 p.m.	do.
,,	Fri., 28th Jan.	Killeague P.E. School.	7-0 p.m.	do.
,,	Fri., 4th Feb.	Cumber Church Hall.	7-0 p.m.	Land Fertility Scheme.
,,	Mon., 7th Feb.	Cullycapple P.E. School.	7-0 p.m.	Cultivation of Vegetables.

CLASSES.

A class in poultry-keeping, arranged by County Armagh Committee of Agriculture, commenced on Monday, 10th January, and is being held in St. Brigid's Hall, Jonesboro'. The class meets on Monday, Tuesday, Wednesday and Thursday, of each week from 7 to 9 p.m., and will be held for a period of three weeks. A class has been arranged by the County Londonderry Committee of Agriculture, commencing on Tuesday, 1st February, and is being held in Mayogall Hibernian Hall, Knockloughrin, at 7 p.m.

A Poultry Class has also been provisionally arranged by County Down Committee of Agriculture, and will be held in Comber, commencing in the second week of February. Notices, giving particulars of the class centre and of the time at which the class will be held, will be displayed in the district.

SCHOOLS NEWS.

ULSTER DAIRY SCHOOL, COOKSTOWN.

The final term of the year 1937 terminated on the 23rd December last, and the results of the examinations held at the end of the term are announced.

Miss S. M. Hamilton, Killycolp House, Tullyhogue, Dungannon, County Tyrone, and Miss R. G. Walker, Hillhall, Lisburn, who are pursuing the senior course of training with a view to qualifying as Instructors, reached the standard for admission to the School for further training.

Miss A. E. Brown, Drogan, Killadeas, Ballinamallard, County Fermanagh, who during her fourth term at the School specialised in Dairying, qualified for the award of a Creamery Scholarship which entitles her to a period of 24 weeks' training at a Creamery approved by the Ministry with a view to qualifying for the Ministry's Certificate of Competency in Creamery Butter-making.

Miss L. B. Saunders, 402, Ravenhill Road, Belfast, obtained first place in the third term class examination, and reached the standard for admission to the senior course of training.

Miss S. Millar, Garvaghy, Portglenone, County Antrim, and Miss M. J. Murdock, Ballinaberice, Templepatrick, County Antrim, who attained a high standard in the examination for third term pupils, have been admitted to the School for the term which commenced on the 4th January to specialise in Dairying and Poultry-keeping respectively.

The following pupils who had completed the ordinary School course of three terms were successful in qualifying for Certificates in Poultry-keeping, Dairying and Rural Housewifery :—

Miss A. V. Carragher, Ballinarea, Altnamackin Post Office, County Armagh.

Miss G. M. Johnston, Creamery, Ahoghill, County Antrim.

Miss M. T. McNulty, Callagheen, Roscor Post Office, Belleek, County Fermanagh.

The next term at the School will commence on the 5th April, and terminate on the 17th June, 1938. Applications for admission to this term are now being received by the Ministry, and candidates who intend to take out a course of training should submit their applications to the Ministry as soon as possible, as equally eligible applicants are admitted to the School in the order in which their applications are received. There is no qualifying examination for admission. Copies of the free illustrated Prospectus of the School and application forms may be obtained from the Secretary of any County Committee of Agriculture, from the local Instructor in Poultry-keeping, from the Lady Superintendent, Ulster Dairy School, Cookstown, or from the Secretary, Ministry of Agriculture, Stormont, Belfast.

NORTH-WEST SCHOOL, STRABANE.

The final term of the year 1937 ended at this School on the 23rd December also, and there were twenty-four pupils in the class all of whom held Scholarships awarded by the various County Committees of Agriculture The number of Scholarship holders from each County was as follows :—

County	Antrim	5
,,	Armagh	2
,,	Down	3
,,	Fermanagh	3
,,	Londonderry	5
,,	Tyrone	6

Each County Committee of Agriculture is offering a number of Scholarships to cover the cost of tuition, board and residence at the School, for the term which will commence on the 5th April and terminate on the 17th June, 1938. Candidates who wish to be considered for the award of these Scholarships should submit their applications as soon as possible to the Secretary or Agricultural Organiser of the County Committee of Agriculture for the County in which they reside. Copies of the free illustrated School Prospectus can be obtained from the Secretary of the County Committee of Agriculture, the local Instructor in Poultry-keeping, the Lady Superintendent, North-West School, Strabane, or the Secretary, Ministry of Agriculture, Stormont, Belfast.

NAMES AND ADDRESSES OF INSTRUCTORS EMPLOYED BY COUNTY AGRICULTURAL COMMITTEES.

County.	Agricultural Instructors.	Horticultural Instructors.	Poultry Instructors.
Antrim	North : Mr. P. T. O'Hare, Broadway, Ballymena. South : Mr. R. D. Mackay, Church Street, Antrim.	North : Mr. W. R. Saunderson, Galgorm Parks, Gracehill, Ballymena. South : Mr. R. H. Clarke, 21, Ridgeway Street, Stranmillis, Belfast.	North : *Miss M. Reid, 20, Broughshane St., Ballymena. South : *Miss R. E. Dick, Church Street, Antrim.
Armagh	Mr. J. C. Patterson, 5, Winder Terrace, Armagh.	North : Mr. J. Hagan, Roseneath, Armagh. South : Mr. J. Scrimgeour, Rockmount, Newry.	*Miss A. G. English, 9, Barrack Hill, Armagh.
Down	North : Mr. R. W. Dickson, Bushey Park, Newtownards. South : Mr. R. F. Small, The Square, Castlewellan.	North : Mr. J. H. Stewart, Agr. Organiser, Committee of Agr. Northern Bank Chambers, May Street, Belfast. South : Mr. D. W. Baillie, Ballydown, Banbridge.	North : *Miss E. F. Anderson, The Square, Comber. Mid : *Miss L. Walters, Rose Cottage, Spa, Ballynahinch. South : *Miss W. McMullen, 42, Newry Street, Rathfriland.
Fermanagh	Mr. D. T. Ritchie, Jamestown, Ballinamallard.	Mr. J. C. Johnston, Laragh House, Culkey, Enniskillen.	Miss A. M. Callery, The Brook, Enniskillen.

*Also Instructor in Home Dairying.

County.	Agricultural Instructors.	Horticultural Instructors.	Poultry Instructors.
Londonderry	Mr. T. H. Lowe, c/o Secretary, Committee of Agriculture, Courthouse, Coleraine.	Mr. A. McL. May, Nedeen, Coleraine.	North : *Miss E. McCluggage, c/o Secretary, Committee of Agriculture, Courthouse, Coleraine. South : *Miss M. Allison, Bank Square, Maghera.
Tyrone	North-West : Mr. W. J. Patterson, Mellmount, Strabane. Mid : Mr. E. S. Daly, Coneywarren, Omagh. South-East : Mr. D. C. Gamble, The Retreat, Coalisland.	Mr. Duncan M'Kenzie, 7, James Street, Omagh.	North : Miss M. H. Davidson, Homelea, Omagh. South : Miss C. J. Davidson, Ranfurly Arms, Dungannon.

*Also Instructor in Home Dairying.

MILK BOTTLES.

Cases of considerable interest and importance to producers and distributors of bottled milk were heard recently at Belfast Petty Sessions, at which four milk vendors were prosecuted under Section 2 (2) of the Merchandise Marks Act, 1887. The substance of the charges against the defendants was that they used, in the course of their trade, bottles belonging to other milk vendors. Since the inception of the Milk Act this practice had unfortunately become widespread, and in an effort to stamp it out the Ministry had brought the prosecutions. The costs of bottles, it was pointed out, was a considerable item in the distributive costs of milk, and it was in the public interest to keep these costs as low as possible. It was admitted that the blame to some extent lay with consumers who were rather careless in returning bottles to their proper owners. The Bench were appreciative of the difficulties and of the desire of the Ministry to stamp out the practice. A warning was issued by the Bench that substantial penalties would be inflicted on subsequent offenders.

The Ministry has prepared a leaflet on the subject for issue by milk vendors to their customers which is reprinted on the following page :—

NOTICE TO HOUSEHOLDERS.

"The Ministry of Agriculture desires to draw the attention of householders to the desirability of returning to their milk vendors all milk bottles supplied by them. The maintenance of an adequate stock of bottles is costly, and if bottles are not returned the owner is put to expense which might be avoided.

In the public interest costs of distribution should be kept as low as possible, and consumers can help by seeing that all bottles are returned.

If two milk vendors supply the same household care should be taken to see that each gets his own bottles. A milk vendor is liable to prosecution for using bottles bearing the name of another milk vendor.

The Ministry is sure that householders will also appreciate the importance of handling milk bottles carefully so as to avoid chipping or breaking them. Careless treatment of milk bottles, or failure to return them is unfair to your milk vendor, and puts him to much unnecessary trouble and expense."

THE MARKETING OF FRUIT.

LOANS FOR THE PURCHASE OF SPRAYING MATERIALS AND SPRAYING MACHINES.

In order to assist apple-growers in the control of those insect pests which so seriously reduce the market value of their produce, the Ministry is prepared to consider applications for loans for the purchase of spraying materials and spraying machines. The poor quality of a considerable proportion of the apples sent for export, due to blemishes caused by insect ravages, demonstrates clearly that spraying is being neglected in many orchards.

For the purchase of spraying materials loans of £10 and upwards may be given. The rate of interest chargeable will be 3 per cent. If the loan is granted on or before the 30th June in any year, it will be repayable by two equal instalments of principal, together with interest on the outstanding balance on the 31st December in that year, and the 31st December of the year following, and if granted on or after 1st July in any year, will be repayable in full on 31st December of the following year.

Forms of application for these loans may be obtained from the Ministry, or from Milk Recording Associations, Creameries, County Committees of Agriculture, Ulster Farmers' Union Branches, Young Farmers' Clubs, or any police barracks in the fruit-growing areas.

Any grower contemplating the purchase of a spraying machine may receive a loan for the purpose. Interest will be at the rate of 3 per cent., and the loan will be repayable in three years by equal annual instalments of principal, together with interest on the balance of the loan outstanding at each gale day.

Forms of application for these loans also will be supplied by the Ministry of Agriculture on request.

For both classes of loan the security will be a Promissory Note, to be signed by the borrower, and two sureties who must be approved by the Ministry.

SIXTEENTH EGG LAYING TEST AT STORMONT.

The third four-weekly period ended on the 23rd December, 1937. There was a slight increase in egg-production, and a further marked increase in the number of scoring eggs laid. The total number of eggs laid during the period was 8,817, which gives a flock average of 12.4 eggs per bird. Of this number 7,376 or 82.5 per cent. were scoring eggs (super-grade and first-grade), whereas the percentage of scoring eggs in the previous period was 69.3 per cent.

The flock average for the first three periods was 35.9 eggs per bird.

The highest average egg-production for the period is to the credit of the birds in Section 6 (Poultry Clubs and Young Farmers' Clubs), namely 14.9 eggs per bird, the Rhode Island Reds in the Station-holders' Section 5 (c) being next with an average of 14.0 eggs per bird.

Eight birds died during the period, bringing the total number of deaths to the end of the first twelve weeks of the test to 20. This represents a mortality rate of 2.8 per cent. as compared with 1.4 per cent. for the corresponding twelve weeks of the previous test.

The following are particulars of the leading pens in each Section :—

SECTION 1. WHITE WYANDOTTES (OPEN). 22 PENS.

Position	No. of Pen	Name and Address of Owner.	Number of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	7	Lt.-Col. J. P. Galbraith, Clanabogan, Omagh, Co. Tyrone.	102	169	31	1	271
2	16	Mr. T. J. McMillan, Crossgar, Co. Down.	130	126	8	—	256
3	20	Mrs. J. R. Jackson, Fortview, Coleraine, Co. Londonderry	44	200	89	4	244
4	19	Mr. J. C. Stewart, Balloo, Killinchy, Co. Down	83	156	64	1	239

SECTION 2. WHITE LEGHORNS (OPEN). 9 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	31	Mr. J. O. Turkington, Derryinver, Lurgan, Co. Armagh.	114	75	11	1	189
2	26	Mr. T. J. McMillan, Crossgar, Co. Down.	73	105	26	1	178
3	29	Mr. J. Stevenson, Maze View, Corcreevy, Hillsborough, Co. Down.	27	142	73	9	169

SECTION 3. RHODE ISLAND REDS (OPEN). 26 PENS.

1	39	Mrs. H. Farr, Elsneuk, Dundrum Road, Newcastle, Co. Down.	228	74	7	1	302
2	49	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim.	135	111	7	—	246
3	55	Mr. W. Patton, The Hill, Loughries, Newtownards, Co. Down.	108	121	90	10	229
4	52	Mrs. G. S. Parker, Lakeside, Tullyveery, Killyleagh, Co. Down.	73	123	23	1	196

SECTION 4. ANY OTHER PURE BREED (OPEN). 15 PENS.

1	67	Mr. R. Holmes, Moneycarrie, Coleraine, Co. Londonderry. (Buff Rocks)	205	85	6	1	290
2	68	Mr. R. Holmes, Moneycarrie, Coleraine, Co. Londonderry. (Buff Rocks)	107	129	28	3	236
3	62	Mrs. M. Benson, Killymoon, Cookstown, Co. Tyrone. (Light Sussex)	68	124	25	3	192

SECTION 5(*a*). WHITE WYANDOTTES (STATIONHOLDERS). 9 PENS.

1	82	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	127	139	34	—	266
2	76	Miss A. Brown, Ballyhill, Crumlin, Co. Antrim.	74	165	101	1	239
3	81	Miss A. Peel, Aghadalgon, Roses Lane Ends, Belfast.	82	90	57	2	172

SECTION 5(*b*). WHITE LEGHORNS (STATIONHOLDERS). 7 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Number of eggs laid.				Test Score.
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	91	Miss I. J. Magill, Mulloughdrin, Dromara, Co. Down.	187	90	55	—	277
2	89	Miss I. Gilmer, Rashee, Ballyclare, Co. Antrim.	86	124	19	—	210
3	86	Mrs. J. Brown, Gorsebank, Culcrum, Co. Antrim.	26	114	46	—	140

SECTION 5(*c*). RHODE ISLAND REDS (STATIONHOLDERS). 18 PENS

1	104	Miss S. McKee, Ardmillen House, Killinchy, Co. Down.	50	248	65	2	298
2	102	Mrs. R. McGiffert, Rathcunningham, Toye, Co. Down.	100	180	20	—	280
3	93	Mrs. H. H. Dickson, Lower Coagh, Co. Tyrone.	97	146	19	2	243

SECTION 6. POULTRY CLUBS AND YOUNG FARMERS' CLUBS. 12 PENS

1	114	Ballywalter Young Farmers' Club, Co. Down. (Rhode Island Red.)	98	108	8	—	206
2	117	Crossgar Poultry Club, Co. Down. (Rhode Island Red.)	82	117	19	—	199
3	116	Banbridge and District Poultry Club, Co. Down. (Rhode Island Red).	60	124	62	8	184

" Test Score " means the total of the super-grade and first-grade eggs. Mrs. Farr's pen, No. 39, of Rhode Island Reds in Section 3 now occupies 1st place in the entire test, while Miss McKee's pen, No. 104, of the same breed in the Station-holders' Section is second. Pen No. 67 of Buff Rocks, in Section 4, entered by Mr. Holmes, now holds third place.

PRICES OF FEEDING STUFFS AT SPECIFIED CENTRES.

The following table shows the retail cash prices per cwt. of Feeding Stuffs at 1st January, 1938, in ten representative centres in Northern Ireland.

	Antrim	Armagh	Ballymena	Belfast	Castlewellan	Coleraine	Dungannon	Enniskillen	Omagh	Strabane
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
PROTEIN FOODS :										
Linseed (whole) ..	12 6	16 0	16 0	16 0	19 6	19 0	17 6	16 0	20 0	16 0
Linseed Cake, home-made ..	—	13 0	12 0	12 6	11 3	—	12 0	12 3	12 6	—
Linseed Cake, foreign ..	10 6	11 6	11 0	11 0	—	12 0	10 9	11 6	11 6	11 0
Linseed Cake Meal ..	10 6	11 6	11 0	11 0	11 3	11 6	12 0	12 6	11 6	11 0
Cotton Cake, decorticated ..	10 6	—	9 6	10 6	10 3	10 0	10 6	10 6	—	10 0
Earthnut Cake, decorticated ..	10 6	—	9 6	9 3	—	10 3	10 0	—	10 0	—
Soya Bean Meal (extracted) ..	11 3	11 0	11 0	11 6	—	11 6	11 0	12 0	11 6	11 0
Fish Meal (60% protein) ..	17 6	16 6	16 0	16 6	—	16 0	16 6	16 6	17 0	17 6
Meat Meal (60% protein) ..	16 6	16 0	14 9	—	16 0	—	16 0	—	16 0	—
Meat and Bone Meal (40% protein)	12 0	11 0	—	10 0	—	12 0	13 6	11 6	—	12 0
MEDIUM PROTEIN FOODS :										
Brewers Grain (dried) ..	—	—	7 6	—	—	—	—	—	—	—
Palm Kernel Cake	8 6	—	9 6	8 0	—	—	—	—	10 6	—
Palm Kernel Meal	8 6	9 6	9 6	8 0	—	9 6	—	—	—	—
STARCHY FOODS :										
Maize (whole)	8 0	8 0	8 3	8 3	8 0	8 6	7 9	8 6	—	—
Maize Meal	8 3	8 6	8 3	8 6	8 6	8 6	8 0	8 9	8 6	8 9
Maize, Flaked	8 9	9 3	8 9	9 0	8 9	9 3	8 9	9 6	9 6	9 3
Wheat (whole)	11 0	10 6	11 0	10 0	11 6	12 0	11 0	—	10 9	9 6
Bran, Red	9 0	9 0	8 0	9 0	—	8 6	9 0	9 6	9 6	8 9
Bran, White	10 0	10 3	9 7½	10 0	9 9	10 6	10 0	10 6	10 6	10 6
Pollard, Brown	9 0	9 0	8 10½	9 0	—	9 6	9 0	9 6	9 6	8 9
Pollard, White	—	10 0	9 9	10 0	9 6	10 0	10 0	10 9	10 6	11 0
Barley Meal	10 3	10 6	9 6	10 0	9 6	10 0	10 0	10 9	10 6	10 6
Tapioca Root Flour	8 0	8 0	8 3	—	—	8 3	8 3	8 9	—	—
Oats (whole)	9 0	8 0	8 0	8 0	7 3	8 0	8 6	8 8	7 3	8 0
Crushed Oats	9 6	9 0	8 6	8 6	7 6	8 6	9 0	9 3	—	9 0

NON-CONCENTRATES :—The average prices at representative markets at the beginning of January, were as follows :—Potatoes (Main Crop), 2/4¼d. per cwt. ; Upland Hay, 59/10d. per ton ; Meadow Hay, 48/7d. per ton ; Oat Straw, 44/1d. per ton.

AVERAGE PRICES OF FEEDING STUFFS.

The following table shows the average retail cash prices per cwt. of feeding-stuffs at 1st January, 1938, with comparative prices as at the first of the previous month; the costs per unit of protein equivalent and of starch equivalent are also given in respect of each month.

	Protein equivalent	Starch equivalent	Average price per cwt. at		Cost per unit of Protein equivalent		Cost per unit of starch equivalent	
			1st Jan. 1938	1st Dec. 1937	Jan.	Dec.	Jan.	Dec.
Protein Foods			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Linseed ..	19.0	119.0	16 10	17 1	17 8½	18 0	2 10	2 10
Crushed linseed	19.0	119.0	18 0	18 10	18 11½	19 10	3 0	3 2
Linseed cake (home-made)	25.0	72.0	12 4	12 0	9 11	9 7	3 5	3 4
Linseed cake (foreign)	25.0	72.0	11 2	11 0	8 11	8 9	3 1	3 1
Linseed cake meal	25.0	72.0	11 5	11 5	9 2	9 2	3 2	3 2
Decorticated Cotton cake	35.0	71.0	10 3	10 3	5 10	5 10	2 11	2 11
Decorticated Earthnut cake	41.0	73.0	9 11	10 4	4 10	5 0	2 9	2 10
Extracted Soya Bean meal	38.0	64.0	11 4	11 4	6 0	6 0	3 7	3 7
Fish meal (60% protein)	53.0	59.0	16 9	16 5	6 4	6 2	5 8	5 7
Meat meal (60% protein)	55.0	61.0	15 11	15 9	5 10	5 9	5 3	5 2
Meat & bone meal (40% protein)	36.0	44.0	11 8	11 5	6 6	6 4	5 4	5 2
Medium Protein Foods								
Palm kernel cake	17.0	75.0	9 1½	9 1	10 9	10 8	2 5	2 5
Palm kernel meal	17.0	75.0	9 0	8 9	10 7	10 4	2 5	2 4
Starchy Foods								
Maize	6.8	81.0	8 2	7 10	24 0	23 0	2 0	1 11
Maize meal	6.8	81.0	8 5	8 2	24 9	24 0	2 1	2 0
Flaked maize	8.6	83.0	9 1	8 9	21 2	20 4	2 2	2 1
Wheat	9.6	72.0	10 10	10 10	22 7	22 7	3 0	3 0
Red bran	10.0	43.0	8 11	8 9	17 10	17 6	4 1	4 1
White bran	10.0	43.0	10 2	10 2	20 4	20 4	4 9	4 9
Brown pollard	11.0	60.0	9 1½	8 11	16 7	16 3	3 1	3 0
White pollard	11.0	60.0	10 2	9 11	18 6	18 0	3 5	3 4
Barley meal	7.0	70.0	10 2	10 1	29 1	28 10	2 11	2 11
Oats	7.6	60.0	8 1	8 0	21 3	21 1	2 9	2 8
Crushed oats	7.6	60.0	8 9	8 6	23 3	22 4	3 0	2 10
Tapioca root flour	1.0	83.5	8 3	8 3	165 0	165 0	2 0	2 0
Non-Concentrates								
Potatoes	0.6	18.0	2 4¼	2 6½	78 6	84 9	2 7	2 10
Turnips (Swede)	0.7	7.0						
Upland hay	4.9	24.0	3 0	3 1	12 3	12 7	2 6	2 7
Meadow hay	4.6	31.0	2 5	2 3	10 6	9 9	1 7	1 6
Oat Straw	0.9	20.0	2 2½	2 1½	49 1	47 5	2 2½	2 1½

The object of the foregoing tables, besides providing information regarding the prices of feeding stuffs and the trend of prices, is to give purchasers a guide as to the economic purchase of supplies. It should be understood that the price per ton is not a sound basis on which to judge whether or not a particular food or grade of a particular food is good value for money. The composition of the foods is the only basis on which different grades can be compared. The value of foods of different kinds, but of the same nature in reference to market prices, can also be compared on this basis.

In the case of an artificial manure which supplies only one fertilising ingredient as, for example, sulphate of ammonia, which supplies nitrogen, the cost of the unit of nitrogen at the price charged can be determined quite readily by dividing the price per ton by the percentage of nitrogen in the sample, and the figure thus obtained is the cost of a unit of nitrogen. By this method the most economical source of nitrogen can be ascertained. Similarly, in the cases of phosphatic and potassic manures.

With feeding stuffs, however, the same method cannot be applied to determine comparative values. This is because every feeding stuff contains three important food constituents in varying proportions. These are (1) carbohydrates, (2) oils or fats, and (3) proteins or albuminoids. The carbohydrates comprise a group of substances such as starch, sugar and cellulose. These substances supply heat or energy to the animal, and the surplus goes to form fat. They are the fuel which the animal requires to keep the body "fires" burning. The oils of a feeding stuff are also heat and energy suppliers, and the surplus is stored as fat. The oils are approximately 2½ times more valuable than the carbohydrates as heat and energy producers, but excess in a ration may lower its digestibility and cause digestive troubles. The proteins are the most valuable and most expensive food constituent. They contain nitrogen and are the part of the food from which products which contain protein are chiefly made. Thus the protein products, such as lean meat, milk and eggs, are formed principally from protein, and young, growing animals, dairy cows and laying hens must have an adequate quantity of protein for full growth, development and production.

While all animals require a certain amount of carbohydrates, oils and proteins, the relative amounts depend on the class of stock. For example, a two-year-old fattening bullock requires much less protein than a dairy cow in milk, and a fattening chicken less than a laying pullet.

There are wide differences in the composition of the different kinds of feeding stuffs. Some are rich in carbohydrates and, therefore, particularly valuable for fattening purposes. These include oats, maize, barley and wheat, and their products. Others are rich in protein and are valuable for producing flesh, milk and eggs. These include decorticated cotton cake, decorticated earthnut cake, meat meal and soya bean meal.

In the following table the composition of some of the commonly used feeding stuffs is shown—

	Water.	Protein.	Oil.	Carbohydrates.
Non concentrates				
Swede turnips ..	88	1	0.2	9
Potatoes ..	75	2	0.1	21
Cabbage ..	89	1.5	0.5	8
Oat Straw ..	14	4	2	37
Meadow hay ..	10	10	3	45
Pasture grass ..	80	3.5	0.8	10
Fattening Foods				
Crushed oats ..	13	9	6	60
Maize meal ..	12	10	4	70
Barley meal ..	13	12	2	66
Pollard ..	13	15	5	57
Flesh forming foods				
Decorticated Cotton cake ..	9	40	9	26
Decorticated Earthnut cake ..	10	46	7	23
Meat meal ..	11	60	6	—
Soya bean meal ..	11	44	1.5	32

The problem confronting the purchaser of feeding stuffs, who is concerned with the business of getting best value for money, is one which is much more difficult to solve than is the case with artificial fertilisers. There are at least four aspects of the problem to be considered:

(1) the quality of the different foods offered for sale. This can be determined by reference to the particulars of composition which a seller must give a purchaser in accordance with the Fertilisers and Feeding Stuffs Act.

(2) The physical condition of the foods, and if fresh or stale.

(3) The suitability of the foods for the purpose in view.

(4) The comparative values of the foods at the prices quoted.

The chief concern of this section of the Report is comparative values and, therefore, that aspect of the problem will be considered specifically.

The proteins play a part in the nutrition of the animal which cannot be taken by either carbohydrates or oils. In addition to this, the proteins, carbohydrates and oils have very different values for the production of energy or fat. It therefore follows that the simple procedure of totalling the percentages of these three ingredients and dividing this total into the price per ton in order to obtain a value for a unit of the food-stuff is quite unsound. Various methods have been used to compare the values of different feeding stuffs, but none is completely satisfactory. For practical purposes the least cumbersome is the

method whereby the food-stuffs are placed in groups of similar composition, and the values of the members of each group are then compared by consideration of (a) their protein equivalents, and (b) their starch equivalents. The starch equivalent is the number of pounds of starch which would be required to produce the same amount of "fat" in an animal as 100 pounds of the food-stuff in question. It is essentially a measure of the fat-producing value of the food-stuff. The protein equivalent is the number of pounds of digestible true protein, plus half the number of pounds of non-protein nitrogenous substances such as amides, present in 100 pounds of non-protein nitrogenous substances the value of the food-stuff to the animal as a source of protein.

By this method all foods can be reduced to comparable standards based on (1) the protein equivalent, and (2) the starch equivalent.

The next stage in comparing values is to determine the cost of a unit of protein equivalent and of starch equivalent in the different foods which are being compared, and to enable the reader to do this the protein and starch equivalent figures for the different foods are given on the table on page 498, and also the cost per unit of protein equivalent and of starch equivalent in each case. These costs have been determined by dividing the protein equivalent figure and the starch equivalent figure, respectively, into the current price per ton, and the lower the quotient figures thus obtained the cheaper is the particular food as a source of protein or of starch equivalent as the case may be.

However, it would be quite misleading to compare the cost of a unit of protein equivalent in a protein food (which is purchased principally for its protein) with the cost of a similar unit in a starchy food. In other words, foods such as maize meal and pollard cannot be compared on the basis of cost of protein equivalent with foods such as decorticated cotton cake and meat meal.

The best course to adopt is to consider for what purpose the particular food is required, decide what foods are suitable for that purpose, examine the samples of these different foods which are offered and, if all appear to be satisfactory, apply the unit value system of determining which one provides protein equivalent or starch equivalent at the cheapest rate. A few examples may be helpful in explaining the procedure.

(1) Suppose it is intended to purchase a protein food for the purpose of balancing a ration for dairy cows. The protein foods suitable for dairy cows are decorticated cotton cake, decorticated earthnut cake and soya bean meal. From the table on page 498 it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Decorticated cotton cake	...	...	5/10d.
Decorticated earthnut cake	...	...	4/10d.
Soya bean meal	...	...	6/0d.

Accordingly decorticated earthnut cake is the cheapest source of protein.

(2) A protein food is required as a milk substitute to balance the ration for fattening pigs. The foods suitable for this purpose are soya bean meal, meat meal and meat and bone meal. Referring again to the table, it is seen that at the current average prices of these foods the cost of the unit of protein equivalent in each is as follows:—

Soya bean meal	...	...	6/0d.
Meat meal (60% protein)	...	...	5/10d.
Meat and bone meal (40% protein)		...	6/6d.

Therefore meat meal (60% protein) is the cheapest source of protein amongst the purchased foods suitable for pigs. This example shows also how the price per ton may mislead a purchaser into thinking he is being economical when he buys at the cheapest price. The 60% meat meal costs 4/3d. per cwt. more than the 40% meat and bone meal, and yet it is a cheaper source of protein than the latter. Besides, a lesser proportion in the meal mixture will suffice, and having usually a lower content of oil than the 40% grade, it is likely to prove more satisfactory than that grade, both from the thriving point of view and its effect on the quality of the bacon.

(3) Whether is it more economical to feed white pollard than brown pollard or white bran than red bran, even though the prices per ton of the white grades are higher than those of the brown or red grades? The figures in the table show that the cost of both the unit of protein equivalent and of starch equivalent is less for the brown pollard than the white, and less for the red than the white bran. It follows, therefore, that at current prices the coloured grades of pollard and bran are cheaper than the white grades. It should be remembered in this connection, however, that the comparison of costs in these cases has been made on the assumption that the composition of the coloured grades is the same as that of the white grades. A pollard containing say, 8 per cent. fibre, even if of a white colour, would have a far lower feeding value than one containing only 4 per cent. of fibre. Colour is not a guide as to the feeding value of pollard or bran.

PRICES OF FERTILISERS.

The following table shows the ranges of retail cash prices of fertilisers per ton at 1st January, 1938.

	£ s. d.	£ s. d.	Cost of fertilising ingredient at average of range of prices shown.		
Nitrogenous Manures			Nitrogen.	Phos. Acid	Potash
Nitrate of Soda (15.5%N.)	8 0 0		10/3¾		
Sulphate of Ammonia (20.6%N.)	7 10 0	to 9 0 0	8/–		
Nitro Chalk (15.5%N.)	7 15 0	„ 9 0 0	10/9¾		
Phosphatic Manures					
Superphosphate (16% S.P.A.)	3 16 0	„ 4 15 0		5/4½	
Semsol (5% S.P.A. 15½% P.A.)	3 5 0	„ 3 15 0		3/5	
*Basic Slag (18% P.A.)	3 10 0	„ 4 0 0		4/2	
Gafsa Rock Phosphate (26% P.A.)	2 15 0	„ 3 7 6		2/4¼	
Potash Manures					
Kainit (14% P.)	3 5 0	„ 3 15 0			5/–
Potash Salts (20% P.)	4 0 0	„ 4 10 0			4/3
Potash Salts (30% P.)	5 3 0	„ 6 0 0			3/8½
Muriate of Potash (50% P.)	8 10 0	„ 9 10 0			3/7¼
Agricultural Salt	1 5 0	„ 3 10 0			

Abbreviations:—N=Nitrogen. S.P.A.=Soluble Phosphoric Acid. P.A.=Phosphoric Acid P.=Potash.

*If obtained under the Land Fertility Scheme, the price of British-made basic slag will be 25 per cent. less than the figures given since a subsidy equivalent to one-quarter the purchase price is payable.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure, and this method of determining values is the only sound basis on which two different manures or two grades of the same manure supplying the same fertilising ingredient can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, in the table of prices it is seen that the average of the range of prices for 14% Kainit is £3 10s. 0d. per ton, and for 30% Potash Salts £5 11s. 6d. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much potash as the Kainit, and is therefore a cheaper source of potash when the price is even double that at which the Kainit is offered. The cost of a unit of potash in the 30% Potash Salts is seen to be only 3/8½d., whereas the cost of a unit of potash in Kainit is 5/-. At the prices ruling for these manures, 30% Potash Salts is therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing Gafsa Rock Phosphate is the cheapest source of phosphoric acid and Sulphate of Ammonia is the cheapest source of nitrogen.

In connection with the costs of the units of phosphoric acid, as shown in the table on the previous page, it should be noted that in the case of Superphosphate, the cost is that of a unit of soluble phosphoric acid: whereas in the cases of Basic Slag, Semsol, and Gafsa Rock Phosphate, the figures represent the cost of a unit of insoluble phosphoric acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other three.

PRICES OF FAT STOCK.

The following were the average prices per live cwt. of bullocks and heifers sold at Belfast Auction Marts during each of the four weeks ended 28th December, 1937:—

Week ended.	Bullocks.		Heifers.	
	s.	d.	s.	d.
7th December ...	39	0	38	9
14th December ...	43	3	43	0
21st December ...	42	3	41	9
28th December ...	41	9	42	0

At the Belfast Auction Marts last month trade for fat cattle recorded a further general improvement. At the beginning supplies were slightly affected by frost-bound road conditions, but, notwithstanding this, buyers were able to fulfill their requirements. As usual at the Sales just before Christmas there were heavy supplies on offer, a good proportion of which were of prime quality. Prize-winning lots helped in raising the average prices for this week to a marked extent. Later, average quotations showed a decrease, but allowance must be made for the fact that the quality was lower and that trade generally was adversely affected by the holidays.

The following were the prices of other classes of stock at the Sales mentioned:—

Description.		Week ended 4–12–37	Week ended 11–12–37	Week ended 18–12–37	Week ended 25–12–37
Store Cattle ..	Av. price per head ..	£12-4-0	£12-6-0	£12-12-6	£13-7-9
	Range of 1st quality ..	£7-15 to £15-15	£8-0 to £16-7	£7-5 to £14-5	£12-0 to £14-10
	,, 2nd ,,	£6-5 to £13-5	£5-0 to £13-0	£5-0 to £18-10	£10-5 to £12-10
Fat Cows ..	Av. price per head ..	£10-17-9	£12-12-6	£12-16-3	£10-3-6
	Range of 1st quality ..	£13-0 to £19-15	£14-0 to £19-5	£13-0 to £25-0	£15-0 to £19-5
	,, 2nd ,,	£10-0 to £15-0	£9-0 to £14-10	£10-0 to £16-10	£7-0 to £15-10
Fat Bulls ..	Average price per head	£17-11-0	£19-9-0	£24-0-3	£18-4-3
Dairy Cattle ..	Av. price per head ..	£20-7-0	£20-13-6	£20-11-3	£21-4-3
	Range of 1st quality ..	£20-0 to £28-10	£23-0 to £32-10	£20-0 to £29-10	£22-0 to £31-5
	,, 2nd ,, ..	£18-0 to £23-0	£16-0 to £23-0	£16-0 to £23-0	£18-0 to £23-0

PRICES OF LIVE STOCK.

Average prices of Live Stock at Fairs during the month of December, 1937.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Fat Lambs under 12 months old)	Young Pigs
					Cows	Heifers			
		Per head £ s.	Per cwt. Live weight.	Per cwt. Live wgt.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.
1	Londonderry	—	33/6 to 40/–	37/–	18 10	—	—	—	1 7
1	Rathfriland	6 17/6	34/– to 40/–	38/6	19 0	16 0	17 0	*1 9/9 ‡ 18/9	1 8
2	Ballymoney	7 0	33/6 to 39/9	—	19 0	17 0	16 10	—	1 14
2	Strabane	—	39/– to 41/–	37/–	17 0	—	—	—	—
3	Moy	—	34/– to 40/–	37/–	16 15	14 15	16 16/3	—	—
7	Omagh	7 0	39/– to 41/–	37/–	17 10	17 0	17 0	*1 15	—
8	Crossgar	—	38/– to 41/–	—	—	—	—	—	1 15
8	Irvinestown	7 1/6	38/– to 40/6	32/6	17 10	15 0	16 0	—	1 12/6
8	Kilrea	6 13/3	35/– to 41/–	37/–	18 0	19 0	—	—	1 8/6
10	Ballygawley	—	31/6 to 43/6	35/6	19 0	—	18 0	—	1 13
10	Enniskillen	5 15	34/– to 40/–	37/–	17 0	15 10	14 10	†1 15	1 10
15	Lisnaskea	—	34/– to 36/–	36/–	16 0	15 0	15 0	—	1 10
16	Ballynahinch	—	38/– to 41/–	—	18 10	—	19 5	—	1 15
18	Portadown	4 16/9	33/– to 37/6	38/–	20 0	17 0	20 0	—	1 15
20	Camlough	5 5	33/– to 41/–	39/–	18 10	18 5	16 0	*1 8	—
21	Moneymore	5 16/9	38/6 to 42/3	39/–	21 15	—	18 5	—	1 10
22	Fintona	7 10	39/– to 40/–	37/6	17 10	16 10	16 0	*2 0	1 9
30	Antrim	—	38/6 to 42/6	41/–	26 0	—	—	—	1 12/6
31	Castlederg	5 0	39/– to 43/–	41/–	16 0	—	—	*1 6	1 12/6
31	Killylea	—	30/– to 44/–	40/–	18 10	—	16 10	*1 11/6	—
1st Jan.	Ballymena	7 1/6	29/– to 43/6	—	25 0	23 10	23 0	—	1 13

* Downs and Cross. † Long Wools. ‡ Mountain.

SHIPMENTS OF LIVE STOCK.

Statement showing the Shipments of Live Stock from Northern Ireland ports during the following periods:—Months of December, 1937, November, 1937, December, 1936; Twelve months ended 31st December, 1937, and 31st December, 1936.

PORTS OF :—	CATTLE.						SHEEP.				PIGS.			
	Fat	Stores	Milch Cows	Springers.	Calves	Total	Fat	Stores	Lambs	Total	Fat	Stores	Total	Horses
Belfast	4,358	2,658	808	17	—	7,841	4,986	—	—	4,986	11,576	—	11,576	70
Larne	—	784	—	—	—	784	—	—	—	—	3,024	176	3,200	10
Londonderry ...	110	2,066	15	17	—	2,208	1,670	—	—	1,670	362	—	362	6
Newry	10	123	—	—	—	133	54	—	—	54	—	—	—	—
Total, December, 1937 ...	4,478	5,631	823	34	—	10,966	6,710	—	—	6,710	14,962	176	15,138	86
Total, November, 1937 ...	5,303	15,047	1,712	126	295	22,483	7,994	1	—	7,995	13,083	268	13,351	142
Total, December, 1936 ...	5,237	3,679	962	82	143	10,103	5,350	—	—	5,350	3,704	212	3,916	140
Total, Twelve months ended 31st December, 1937 ...	57,875	181,125	17,859	2,154	4,069	263,082	57,747	392	78,398	136,537	136,198	2,978	139,176	3,062
Total, Twelve months ended 31st December, 1936 ...	73,676	162,670	16,614	2,217	12,982	268,159	50,839	535	109,587	160,961	46,123	1,263	47,386	4,796

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 30th November, 1937, and the eleven months ended 30th November, 1937, with comparative figures for the corresponding periods in 1936. This information also includes trade with Ireland across the land boundary.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision).

COMMODITY.	IMPORTS.				EXPORTS.			
	Month ended 30th Nov.	Month ended 30th Nov.	11 months ended 30th Nov.	11 months ended 30th Nov.	Month ended 30th Nov.	Month ended 30th Nov.	11 months ended 30th Nov.	11 months ended 30th Nov.
	†1937	1936	†1937	1936	†1937	1936	†1937	1936
Bacon ... ... cwt.	1,938	3,373	35,002	32,491	42,474	39,762	356,439	369,452
Hams ... ... cwt.	539	2,105	15,918	21,687	9,623	14,649	112,546	133,781
Pork ... ... cwt.	2	1,104	4,386	10,911	4,238	4,891	31,781	36,887
Butter ... ... cwt.	7,593	12,437	186,975	189,922	720	260	4,115	6,454
Eggs ... ... gt. hds.	8,769	14,028	807,818	1,067,550	180,534	155,590	3,277,988	3,361,021
Oat Products (inc. Oatmeal) cwt.	1,640	1,554	22,792	26,196	9,928	8,639	76,083	69,907
Potatoes ... ... tons	4	158	6,139	11,076	*17,938	*24,268	*164,504	*208,914
Poultry ... ... cwt.	—	784	2,558	4,251	17,348	13,848	174,296	154,795
Grass Seeds ... cwt.	205	1,269	7,787	12,986	9,217	19,273	258,875	319,938

* These figures represent the quantities of potatoes inspected for shipment by the Ministry of Agriculture.

†These figures do not include direct trade with places abroad.

Table showing the number of Live Stock (1) exposed for sale, and (2) sold at 19 fairs in Northern Ireland, during the months of December, 1936, and November and December, 1937:—

Description of Live Stock.	December 1936.		November 1937.		December 1937.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ..	5,016	3,617	8,070	6,034	4,267	3,407
Fat Cattle ..	1,370	1,222	1,426	1,262	1,130	1,015
Dairy Cattle ..	1,188	917	1,198	1 001	753	670
Sheep ..	320	264	261	119	109	89
Lambs ..	238	161	695	422	480	358
Young Pigs ..	3,025	2,485	3,060	2,323	2233	1,709

With the severe wintry weather of the greater part of December causing roads to become frost-bound, and thus making transport extremely difficult and dangerous, supplies at all departments at fairs suffered and were much below seasonal levels. Shippers and dealers attended in good numbers, and a good trade ruled throughout the month for all classes of cattle. The smaller offerings of stores remained a strong feature of the trade, and good clearances were effected at recent prices. Yearlings and six-quarter-olds showing quality and condition were in favour and, as usual, good forward stock were in firm request. The demand for fat cattle improved during December, but the numbers at fairs were much below the normal. The quality was mostly of a good standard and good clearances were readily effected. Animals showing finish and of medium-weight were the best sellers, and prices for these, as indeed for all classes moved steadily upward during the month. Dairy cattle offerings were very small, and animals of good quality were readily disposed of, and recent high prices were usually repeated. The small supplies of sheep were, as a rule, lacking in quality; business was dull, and purchases were confined to local requirements. Quotations for fat lambs and for fat sheep moved in buyer's favour. Smaller numbers of young pigs were a variable trade at fairs where a good volume of business was done last month at prices showing a tendency to ease. Trade for sows was almost negligible at some centres; fair to good animals of the York and York cross-bred types were sold at from £6 to £14 each.

12th January, 1938.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

ULSTER DAIRY SCHOOL, COOKSTOWN.

U. D. S.

USEFUL and practical courses of instruction in poultry-keeping, dairying and domestic science are provided for girls at this School.

DEFINITE advantages are derived from a course of training, whether the object is to return home or to take employment elsewhere.

SCHOOL fees by reason of the fact that entry is by partial scholarship are only £3 : 3 : 0 per term of 11 weeks, inclusive of board and residence.

Candidates for admission should obtain copies of the prospectus from the Ministry of Agriculture, Stormont, Belfast, and send in application forms without delay. Next term begins on 4th January, 1938.

MINISTRY OF AGRICULTURE.

List of Leaflets and other Publications.

LEAFLETS.

No. 1. Flax Seed, 1937.
" 2. Improvement of Farm Poultry.
" 3. Feeding for Egg Production.
" 4. Marketing of Eggs.
" 5. The Dishorning of Calves.
" 6. The Packing of Apples in Standard Boxes
" 7. Potato Trials.
" 8. Seed Testing for Farmers.
" 9. The Renovation of Orchards.
" 10. Fruit Tree Pests—Capsid Bugs.
" 11. Fruit Tree Pests—Aphides and Apple Sucker.
" 12. Fruit Tree Pests—Caterpillars.
" 13. Contagious Abortion in Cattle.
" 14. Cheese-making on the Farm.
" 15. Suitable Varieties of Fruit.
" 16. The Feeding of Dairy Cows.
" 17. Home Bottling of Fruits and Vegetables.
" 18. Marketing of Dead Poultry.
" 19. How to Feed Linseed.
" 20. The Hatching and Rearing of Chickens.
" 21. The Uses and Advantages of Portable Poultry Houses.
" 22. Leather-jacket Grubs.
" 23. The Handling and Care of Wool.
" 24. Fluke in Sheep.
" 25. The Rearing and Management of Young Horses.
" 26. Ordnance Survey Maps for Farmers.
" 27. How to Keep Eggs Clean.
" 28. The Construction of a Laying House for Poultry.
" 29. The Selection and Breeding of Laying Hens.
" 31. Coccidiosis in Poultry.
" 32. Roup of Poultry (Fowl Pox).
" 33. Spraying Calendar for Apple Orchards.
" 34. The Pruning of Apple Trees.
" 35. The Fattening of Pigs.
" 36. Advantages of Milk Recording.
" 37. The Raising and Fattening of Turkeys.
" 38. The Destruction of Charlock.
" 39. The Production of Clean Milk.
" 40. The Laying Down and Management of Temporary Pastures.
" 41. Blackleg, Blackquarter or Quarterill.
" 42. The Purchase of Balanced Rations for Dairy Cows.
" 43. Tuberculosis in Poultry.
No. 44. Results of Crop Experiments, 1937.
" 45. The Breeding and Rearing of Pigs.
" 46 Hints for Winter Egg Production.
" 47 The Care and Management of Sheep
" 49. American Gooseberry Mildew.
" 50. Potato Blight.
" 51. Butter-making on the Farm.
" 52. Gapes in Chickens.
" 54. The Breeding and Rearing of Calves.
" 55. Destruction of Ragwort or Bendweed.
" 56. Identification of Egg Supplies.
" 57. How to have Eggs of First Quality.
" 58. How the Fertilisers and Feeding Stuffs Act benefits the Farmer.
" 59. Bacillary White Diarrhoea (Pullorum Disease).
" 60. Advantages of Winter Agricultural Classes.
" 61. The Care and Management of Breeding Bulls.
" 62. The Production of Timber on the Farm.
" 63. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
" 64. The Destruction of Warble Fly Maggots in Cattle.
" 65. The Packing of Apples in Barrels.
" 66. Seed Testing Facilities for Traders.
" 67. The Cultivation of Vegetables.
" 68. The Cultivation of Strawberries.
" 69. The Construction of Piggeries.
" 70. Ringworm.
" 71. The Cultivation of Raspberries.
" 72. Tree Planting for Shelter and Ornament.
" 73. The Propagation and Maintenance of Healthy Stocks of Potatoes.
" 74. New Pure Strains of Flax.
" 75. Pig Production and the Pigs Marketing Scheme.
" 76. Acarine (Isle of Wight) Disease of Bees.
" 77. Licensing of Milk Producers and Distributors.
" 78. Graded Milk.
" 79. The Picking and Storing of Apples.
" 80. Hoose or Husk in Farm Stock.
" 81. The Construction of Cow Houses.
" 82. White Scour in Calves.
" 83. The Care, Management and Feeding of the Poultry Breeding Stock.
" 84. Lime and Liming.

Any of the above leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

CIRCULARS.

No. 1. Phosphatic Fertilisers.
" 5. Why Pay a Tax on the Horns of Cattle ?
" 8. Basic Slag.
" 9. Smut in Oats.
" 10. Purchase of Fertilisers and Feeding Stuffs.
" 11. Fertilisers and Feeding Stuffs Act—General Summary.
" 12. The Treatment of Liver Fluke.
" 13. The ox-Warble Fly.
" 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
Reports on Egg-Laying Tests.
Crop Insurance.
List of Growers of Certified Crops of Immune Varieties of Potatoes.
List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
The Ministry's Monthly Report.
Register of Premium Stallions.
Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated :—

(1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
(3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.

W1471/G2878.4300.1/38.BL.G258.